

TYPES OF FOCUS IN SPANISH: EXPLORING THE CONNECTION BETWEEN FUNCTION AND REALIZATION

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ABSTRACT

This thesis revisits the divide between information focus and contrastive focus in Spanish. This divide is said to manifest itself not only in meaning differences, but in surface structure as well, resulting in different syntactic and phonological realizations depending on the intended pragmatic function of a focused sentence. According to previous accounts, an utterance in which focus is expressed by dislocating the relevant element to the end of the sentence is assumed to signify information focus, while a strategy utilizing a specific prosody change on the focused element is said to express contrast. This work argues, in opposition to previous assumptions from the literature, that there is not a strict divide between the realization of one kind of focus or another, and in fact, that these pre-conceived meaning divides are not themselves straightforward to characterize. Further, this work argues for the possibility that the choice of focus construction is highly influenced by speakers' communicative intentions and constraints.

The conclusions reached in this thesis are the product of a combination of empirical and theoretical work. Empirical evidence is drawn from two sources: 1) data from an original elicitation experiment involving native speakers of Spanish producing focused constructions under different pragmatic situations; and 2) findings from the literature on on-line sentence processing studying focused constructions specifically. The first source of data points at the conclusion that the strict information-as-syntactic vs. contrast-as-phonological divide has no base in Spanish. The second source argues for the need for a more functionally-informed approach to focus constructions. A formal analysis of the data using the QUD framework also demonstrates that different kinds of

focus can be represented under a single unified semantic approach.

BIOGRAPHICAL SKETCH

Natalia Buitrago was born in Armenia, Colombia in 1987, and immigrated to the United States in 2001. She obtained a double Bachelor of Arts degree in Anthropology and Linguistics in 2009 from Stony Brook University, and went on to pursue graduate studies in Linguistics at Cornell University, culminating with a Master of Arts degree in 2013. From 2010, she was also a member of the Cornell Language Acquisition Laboratory, where she worked as a research and teaching assistant and collaborated with ongoing projects, such as the editing of the laboratory's Research Manual.

To Anca and Neil.

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CHAPTER 1

INTRODUCTION

This work is an investigation into focus constructions in Spanish. By focus constructions I understand those sentences in which a given element is exalted or given more prominence in one way or another. The literature on Spanish recognizes a few different constructions that are usually associated with the presence of focus, and these various constructions, their differences and similarities, are the main point of this thesis. More concretely, the purpose here is to test with empirical data some assumptions about the distribution and function of Spanish focus constructions that have been passed down from previous literature.

The Spanish literature has concentrated on the study of two primary focusing strategies: one involving exclusively the use of prosodic prominence on the relevant constituent, and one in which this same constituent is dislocated to the end of the sentence instead. These two constructions have been analyzed as being different at various linguistic levels, including the prosodic, syntactic, semantic and pragmatic levels. Specifically, these two constructions have usually been taken to have quite different natures. Some authors have attributed to them completely different meanings, thus proposing that they may have different semantic representations or may be derived from different rules (Zubizarreta (1998), Büring and Gutierrez-Bravo (2002)). In the remainder of this chapter, I will introduce the data in question and will specify the assumptions usually held about each construction. Following this, I will provide a review of some of the previous analyses of Spanish focus, which have had in common the assumption of a strict semantic divide between the different constructions. I will ultimately conclude that analyses of this type seem to be lacking in ade-

quate empirical data, and that only a systematic survey of what focus constructions are actually used, and under which circumstances, can determine whether various focus constructions are in fact different at a basic level.

1.1 Spanish focus data

Spanish is a language that, although similar to English in many aspects, possesses greater flexibility in word order. Thus, Spanish can mark focus as in English, through the use of prosodic prominence, or in a special syntactic construction in which the focused element surfaces sentence-finally. The first possibility, henceforth the "prosodic strategy", is shown in (1), and the second, the "syntactic strategy", appears in (2). Capital letters represent prosodic prominence.

(1) a. Focused subject

[EL LEÓN_F] caza a las zebras
 The lion hunts ACC the zebras
 ['Lions_F] hunt zebras'

b. Focused object

El león caza a [LAS ZEBRAS_F]
 The lion hunts textscacc the zebras
 'Lions hunt [zebras_F]

(2) a. Focused subject

A las zebras las caza [el león_F]
 ACC the zebras them hunts the lion
 ['Lions_F] hunt zebras'

b. Focused object

El león caza a [las zebras_F]
 The lion hunts textacc the zebras
 'Lions hunt [zebras_F]

As seen in (1), the prosodic strategy adds prosodic prominence to the focused element. This prominence comes in the form of a specific pitch accent, L+H*, on the word to be focused (Face 2002), which means that a speaker's pitch will be low immediately before the tonic syllable and rise sharply upon reaching this syllable. Prosodic prominence can occur on any constituent of the sentence, although in this work I will focus on subjects and objects only. Lastly, prosodic prominence does not affect the word order in a sentence, thus in Spanish, where the canonical word order is SVO, this order remains unchanged when the prosodic strategy is used.

The sentences in (2), illustrating the syntactic strategy, show that Spanish has the possibility of dislocating constituents from their canonical syntactic positions for purposes related to information structure. This strategy consists of placing the focused element at the very end of the sentence, even if this position is atypical for the relevant constituent. Notice that different kinds of constituents can undergo this dislocation, even verbs, but again, I will center the present discussion around subjects and objects. Related to this, the fact that this construction has been used is obvious to the hearer only when the subject is being focused, as an object occurring sentence finally yields the same SVO order as a neutral, canonical sentence.¹ Lastly, notice that when a subject is moved to the end of the sentence the object in the same sentence can appear in

¹I will not explore here whether objects can be focused with the syntactic strategy. There seems to be no evidence to conclude that they cannot, despite the fact that they are identical to neutral sentences. My opinion is that being sentence final carries certain properties which are often associated with objects (i.e. discourse newness). Chapter 3 will expand on this thought.

the first position (as in (2-a)). This topicalization of the object is very common, though not mandatory, and it is accompanied by a resumptive clitic. The syntactic workings of topicalization and resumptive pronouns will not be a topic to be discussed in this thesis, but the morpho-syntactic changes that accompany this strategy should be pointed out.

The prosodic and syntactic strategies are not the only ways of expressing focus in Spanish, as we will see in Chapter 2, but they are the strategies that authors on Spanish focus have written the most about, as they seem, in a way, to be complementary: if prominence is not expressed by phonological means, then it can be expressed by syntactic means. Moreover, in both cases the operation is very simple (pitch change or movement), and thus these constructions are seen as basic. In addition to this, and more importantly, authors have attempted to relate the difference in surface realization with a difference in meaning. The syntactic strategy has been tied to a type of focus often called "information focus." An element carries information focus when the prominent element is the word that answers a Wh-question. For example, in the English sentence below, John is marked with information focus, as it is the element replacing the Wh-word *who* in the previous question.

- (3) A: Who did Bill invite?
 B: Bill invited [John_{IF}]

Thus information focus is roughly defined as delivery of (new) information in order to keep discourse going, and in practice it is diagnosed with a question-answer sequence. In Spanish, according to the literature, the answer to a Wh-question can only yield a sentence marked with the syntactic strategy, as in (4)

(previous approaches holding this assumption will be summarized in the next subsection).

(4) Who invited John?

A John lo invitó Bill
Acc J. him intived B.

'Bill_F invited John'

With respect to the prosodic strategy, it is often assumed to be utilized exclusively in cases of contrastive focus. This means that prosodic prominence would only obtain when the focused element stands in a position where its properties contrast with the properties of another similar element in the discourse. For example, in (5) the property of making dinner is attributed to Mary as opposed to Lucy.

(5) [Mary_F] made dinner, not Lucy.

In Spanish, according to assumptions in the literature, a contrast or correction of this kind can only be realized with the prosodic strategy, yielding a construction very similar to that of English (Zubizarreta 1998, Dominguez 2004, and others).

(6) [MARIA_F] hizo la comida, no Lucy.
M. made the dinner, not L.
'Mary made dinner, not Lucy'

The next section will go deeper into some of the previous accounts of Spanish focus, which tend to assume these differences are absolute. As Chapter 2 will show, however, strict mappings from meaning to surface realization do not obtain. The often-assumed intuition that these differences exist, made famous by Zubizarreta, will turn out to be, if anything, a weak statistical tendency.

1.2 Previous approaches

The investigation undertaken in this thesis seeks to address the assumptions of one of the major works from the literature on Spanish focus, which is that of Zubizarreta (1998). Departing from the assumptions laid out in the last section, about which realizations correspond to which kinds of focus, Zubizarreta creates an account for this difference in terms of two grammatical rules applying in case of either information focus or contrastive focus. Thus the assumed differences in meaning are said to be tied to different rules which at the same time yield two different surface structures, with either syntactic or prosodic marking.

The rule applied in instances of information focus, the syntactic strategy yielding OVS, is hypothesized by Zubizarreta to align the focused element with the sentence's nuclear stress, which is assumed to occur sentence-finally. Thus, this construction seeks to place semantic prominence (focus) in a position that by default carries prosodic prominence. This state of affairs is achieved by the interaction of two rules. The first rule determines the placement of nuclear stress, which for Spanish is defined as follows:

- (7) Nuclear Stress Rule (Spanish version)

Given two sister nodes C_i and C_j , the one lower in the asymmetric c-command ordering is more prominent.

This rule will insure that nuclear stress is placed on the rightmost constituent in a sentence. The second rule determines the placement of prominence related to focus.

(8) Focus/Prominence Rule

Given two sister nodes C_i (marked [+F]) and C_j (marked [-F]), C_i is more prominent than C_j .

This rule dictates that prosodic prominence, in the form of nuclear stress, will always be placed on the constituent that is focus-marked in the logical representation. The interaction of these two rules, as we might expect, may often result in a conflict. For example, Spanish being SVO, a focus-marked subject would want to surface sentence-initially, yet the highest prosodic prominence would still be sentence-final. Where F marks information focus, a construction of the form in (9) should not be acceptable, because although (7) is obeyed, (8) is violated.

- (9) * $[John]_F$ invitó a $[Bill]_{NS}$
J. invited acc B.

To solve this problem, according to Zubizarreta's analysis, Spanish uses the strategy of dislocating the focused subject to the end of the sentence, so that its placement coincides with that of the nuclear stress (the syntactic model of this movement is not relevant for our purposes.) This kind of movement is

identified as P-movement, or prosodically motivated movement.

Contrastive focus, on the other hand, is not produced by the interaction of the Nuclear Stress Rule and the Focus/Prominence Rule. Instead, Zubizarreta proposes that there is a separate rule responsible for contrast and emphasis (and presumably correction), focus types that, given her assumptions, are never realized with the syntactic strategy. Her proposal is a Contrastive/Emphatic Stress Rule, which can be defined as obeying the principle below:

(10) Focus/Contrastive Stress Correspondence Principle

A word with contrastive stress must be dominated by every F-marked constituent in the phrase.

According to this rule a constituent being contrasted or emphasized (and thus focused) will receive prosodic prominence regardless of the place it occupies syntactically, as it only necessitates that this constituent and all that dominates it be marked with a certain feature. The Focus/Contrastive Stress Correspondence Principle does not interact with the Nuclear Stress Rule, as the kind of prosodic prominence in these two cases is attributed to different sources (contrastive stress vs. nuclear stress respectively).

The trees in Figures 1.1 and 1.2 illustrate how the two different kinds of focus can be assigned. Under information focus, phrases are cyclically combined, and the rightmost one obtains greatest prosodic prominence in each cycle. On the other hand, under contrastive focus, all F-marked nodes dominate one single constituent. Although Zubizarreta does not mention this explicitly, it may be necessary to assume two different kinds of F-marking in order to achieve

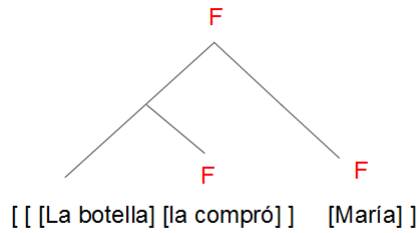


Figure 1.1: F-marking of information focus. Translation: "The bottle it bought Maria"

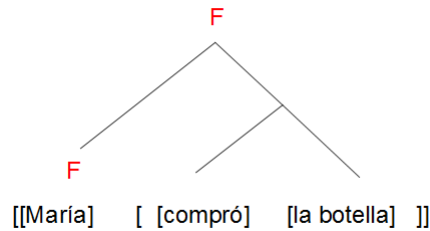


Figure 1.2: F-marking of contrastive focus. Translation: "Maria bought the bottle"

this differentiation, otherwise it is not clear why F-marking would not apply cyclically under contrastive focus as well.

Given the fact that in Zubizarreta's framework OVS is achieved as a compromise between the demands of two rules, it comes as no surprise that a later version of this account was formulated in Optimality Theory. Departing from the common assumption that answers to Wh-questions always result in the OVS word order, Büring and Gutierrez-Bravo (2002) formulated a series of constraints whose interaction would capture the role of sentence-final prosodic prominence without need for the Nuclear Stress Rule, that is, without the assumption that intonational prominence is achieved by syntactic means. This is done by proposing that intonational phrases (iP) are made up of "phonological

phrases" (phonP), and that main prominence is placed on the rightmost phonP of an iP, not the rightmost syntactic constituent. In this way, there is an intermediate level mediating between syntax and prosody. The first and most highly ranked constraint proposed for this analysis asserts that the element marked as focused in a sentence will always be the most prominent.

(11) FOCUS PROMINENCE (FocP)

Focus is most prominent

-If α is a prosodic constituent at level n which contains a syntactic node that is F-marked, α is the head of the prosodic category at the level $n+1$ that contains α .

Another highly ranked constraint in this approach is one that aligns the phonP that heads an intonational phrase with its right edge. Thus far, the two most highly ranked constraints conspire in aligning the focus with the right edge of a sentence.

(12) iP-Hd-right

Align the right edge of every iP (intonational phrase) with the right edge of the phonP that is the head of the iP.

-Violated when the phonP that receives the nuclear accent is not right-aligned with the iP.

Next, this model stipulates that in Spanish each prosodic word is in itself a phonological phrase, that is, a prosodic unit with its own pitch accent (whereas in English phonological phrases coincide with XPs). This assumption also be-

comes a constraint.

- (13) PrWd=phonP Align the right edge of each prosodic word with the right edge of a phonP.
-Violated once for every lexical head (N, V, ect.) whose right edge is not the right edge of a phonP.

This last constraint interacts with one whose role is to defend the canonical order of subjects and objects.

- (14) SO
The subject is structurally more prominent than the object.
-Violated when the subject does not asymmetrically m-command the object.

The ranking of these four constraints is thus as follows:

- (15) FocP, iP-Hd-right > PrWrd=phonP > SO

If we take a sentence with a focused subject this ranking would always lead the candidate with the non-canonical word order to win, as illustrated in the tableau in 1.1 (parentheses around the candidates indicate a phonP and bold face indicates main prosodic prominence).

The constraints defined here predict the desired outcome under the assumption that information focus maps strictly to OVS (or VOS in this case). Buring

Candidates	FocP	iP-Hd-right	PrWd=phonP	SO
(S_F VO)			N!V	
(S_F) (V) (O)	*!			
(S_F)(V)(O)		*!		
→(V)(O)(S_F)				*

Table 1.1: Winning candidate uses syntactic strategy

Candidates	FocP	iP-Hd-right	PrWd=phonP	SO
(S_F VO)			N!V	
(S_F) (V) (O)	*!			
→(S_F)(V)(O)				
(V)(O)(S_F)				*!

Table 1.2: Winning candidate uses prosodic strategy

and Gutierrez-Bravo offer no formal account of contrastive focus, yet they do assume that such a distinction exists and presumably, like seems to be the case in Zubizarreta’s account, they would propose a different kind of F-marking for instances of contrastive focus. It would be possible to propose that there is one kind of F feature, F[+info], which is different from F[+contr], and only elements marked with the former are subject to the constraint iP-Hd-right. This means that an evaluation of an underlying SVO in which the subject is contrastively focused would not eliminate the candidate (**S_F[+contr]**)(V)(**O**), as shown in the tableau in 1.2.

Thus, although Büring and Gutierrez-Bravo’s analysis does not necessitate that prosodic structure be derived directly from syntactic structure, as with the NRS, it still assumes a deep difference between different kinds of focus.

The goal of formulating an account of the Spanish data without making use of the Nuclear Stress Rule was also pursued by Dominguez (2004), who revisits the prosodic properties of different kinds of focus in order to identify more

concrete differences. Dominguez shows data from a production study, in which subjects were asked to pronounce sentences with contrastive focus (in the form of a correction to a wrong statement), and sentences with information focus (answers to a Wh-question). She concludes, with Face (2002), that a contrastively focused element is associated with a pitch accent of the form L^*+H , meaning that the focused element's tonic syllable is aligned with a low pitch, and this pitch rises on the following syllable. Information focus is associated with a different prosodic feature, but unlike Zubizarreta, Dominguez does not correlate it with nuclear stress. Instead, information focus is correlated with another distinctive pitch accent that occurs sentence-finally. This sentence-final pitch accent consists of a lowering on the focused element, followed by a slight rise and a final low boundary tone. This is represented as $L^*L\%$. Thus, Dominguez associates both kinds of focus with a certain distinctive pitch accent, as opposed to associating contrastive focus with pitch accent and information focus with nuclear stress.

In addition to stating prosodic differences in this manner, Dominguez points out that Spanish does allow OVS to have a contrastive reading for the subject, as in the example below.

(16) Was it Antonio who saw the accident?

No, lo vió Carlos
no, it saw Carlos

'No, Carlos saw it'

Dominguez does assume, however, that OVS is the only possibility when pro-

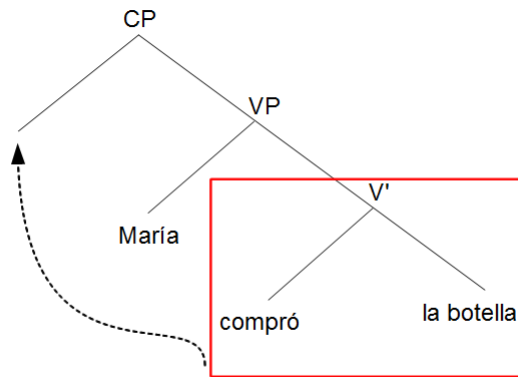


Figure 1.3: "Maria_F bought the bottle" (Information)

ducing information focus, that is, when answering a Wh-question. The reason that this occurs is syntactic, and it reveals another difference separating information and contrastive focus. Information focus is said to be *in-situ*, meaning that all non-focused material raises to the left, stranding the focus. This is seen in Figure 1.3.

Contrastive focus, on the other hand, is associated with a specific FocP projection and the checking of a [+F] feature, which accounts for the occasional occurrence of contrastively focused elements on the left periphery, as in (17).

- (17) [La mesa_F] la rompió Juan
 The table it broke J.
 '[Juan_F] broke the table'

However, as we have observed, contrastive focus can occur anywhere in the sentence. To Dominguez this means that movement of a contrastively focused element to the left periphery can be optionally covert. In either case, both kinds are associated with the characteristic pitch accent L+ H*. This syntactic structure

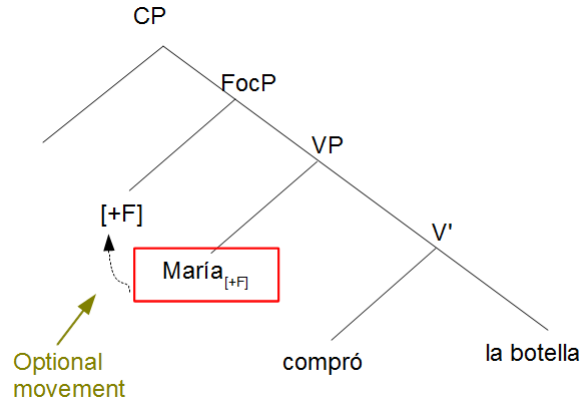


Figure 1.4: "María_F bought the bottle" (Contrastive)

is shown in Figure 1.4.

While this last account of the differences between information and contrastive focus makes some useful contributions, it retains many problems. First, sentence-final contrastive focus, which is very possible in Spanish, is not necessarily associated with the pitch accent L+ H*, and it can felicitously be expressed with a prosodically neutral OVS word order. Also, the presence of optionality of overt movement in this account is quite undesirable, and in any case it is not explained why, in a syntactic account, the presence of a feature [+F] would be associated with contrast while its absence is associated with information delivery. We can see, then, that this account fails to make an empirically and explanatorily satisfactory distinction between information and contrastive focus, although the author assumes that there is one.

Regardless of the virtues or inadequacies of the individual accounts reviewed here, they all hold a set of assumptions distinguishing two kinds of focus, information and contrastive, both in terms of meaning and in terms of surface structure. More specifically, all these accounts have in common that they strictly associate information focus with the word order OVS and contrastive

focus with the presence of special prosodic prominence in the form of a pitch accent. The remainder of this thesis will investigate whether these assumptions are correct and should be accounted for. Chapter 2 presents an experiment in which speakers were given triggers for producing sentences with either information focus (answers to Wh-questions) or contrastive focus (corrections to wrong statement). The experimental data will suggest that the assumptions held by the authors reviewed above are incorrect, and that there is actually no strict mapping from one focus type to a given surface structure. Chapter 3 will provide accounts for the observed data in different forms. Section 3.1 will propose some modifications to the Optimality-theoretical account presented above, concluding that even additional formal machinery cannot capture all the observed data in this framework. Section 3.2 will show how a semantic framework, QUD, can formalize both information and contrastive focus, and capture its small differences in meaning without assuming major differences between them. Section 3.3 will present independent evidence that the different surface realizations of focused elements may not be themselves focus markers, but instead they make other pragmatic contributions that are independent of focus itself. Following this, there will be some reflections on future research and a general conclusion.

CHAPTER 2

THE EXPERIMENT: INFORMATION VS. CONTRAST

The literature on Spanish focus has consistently assumed a divide between at least two different versions of the phenomenon. The more widely accepted approach, as we have seen from the discussions in the previous chapter, assumes that there exists a semantic difference between information and contrastive focus, and that these two functions are associated with specific grammatical constructions. The authors reviewed so far have claimed that information focus is marked in this language by matching the focused word with the sentence's nuclear stress, which sometimes results in subjects surfacing sentence-finally. On the other hand, contrastive focus is marked by raising the pitch on the focused word's tonic syllable, regardless of where in the sentence it is.

For this thesis, I have set out to test this assumption by way of an experiment that employs an elicited production methodology. This means that, instead of directing subjects to produce a given focus construction, I have provided them with a trigger for narrow information focus (Wh-questions), and for contrastive focus (correction scenarios), and have left the choice of focalizing strategy open to them. In what follows, I will show a list of the hypotheses that drove this experiment, as well as a detailed description of the experimental procedure undertaken to test them. This will be followed by a summary of the obtained results and a series of statistical tests in order to answer the various experimental questions. Finally, there will be a discussion of what this experiment's results seem to show in relation to previous assumptions about Spanish focus. We will see that some of the fundamental assumptions are challenged to an extent, especially those which dictate a rigid mapping between a given type of focus and

the surface form that obtains from it.

2.1 Hypotheses

As reviewed above, it is assumed by some that the phenomenon of focus is divided at least into an information and a contrastive type, that these two types have different semantic structures and pragmatic functions, and that their realizations are two grammatical constructions derived from different rules. Second, and related to this, is the assumption that information focus in Spanish is marked by placement of the focused word sentence-finally, and that contrastive focus is marked by a heightened pitch on the focused word.

While this thesis does not aim to determine all the possible pragmatic functions and realizations of focus marking, it is at least possible here to test whether a focus-marked utterance targeted at delivering new information and one intended as the correction of a previous assumption are indeed realized in different ways in Spanish. Thus my main research question is:

- (1) Are information focus and contrastive focus realized in different ways in Spanish?

This yields the following null hypothesis, which focuses on the realization of subjects due to differences being more visible from this position:

- (2) H_0 : There is no significant difference between frequency patterns for the realization of subject information focus and subject contrastive focus.

As the hypothesis in (2) may not in itself tease apart whether a difference would be due to one construction or another, it will be necessary to break it up into smaller hypotheses. Thus, the sub-hypotheses in (3) and (4) can readily test relevant subparts of of the main hypothesis.

Sub-hypotheses:

- (3) H_{0-1} : SVO and OVS realizations of focused subjects are drawn from the same distribution under both information and contrastive contexts.
- (4) H_{0-2} : Accented and unaccented focused subjects of SVO tokens are drawn from the same distribution in both an information and a contrastive context.

In this way, (3) can be tested by comparing the amount of occurrences of the syntactic strategy in two data sets, one with informationally focused and one with contrastively focused sentences. In the same way, (4) can be tested by comparing the use of a heightened pitch accent in the same data sets. In fact, if previous assumptions are correct, a data set containing only instances with information focus should exhibit no occurrences of prosodic marking. Conversely, sentences with contrastive focus should never be marked with the syntactic strategy (according to Zubizarreta, though not according to Dominguez). We will see that these assumptions are challenged by the results obtained.

In the next section, I will present in detail the experiment designed in order to test the hypotheses above.

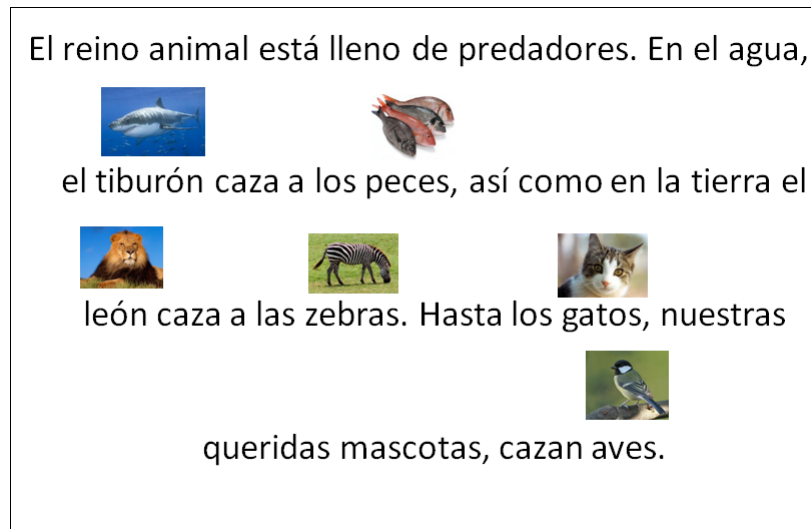


Figure 2.1: Sample text slide - 'The animal kingdom is full of predators. In the water, sharks hunt fish, in the same way that on land, lions hunt zebras. Even cats, our dear pets, hunt birds'

2.2 Methodology

The goal of this experiment was to elicit focus-marked sentences from speakers, in such a way that some exhibited information focus and some contrastive focus. For this purpose, subjects were shown a series of slides with a short text and small photographs related to certain words in the text, and they were asked to read these texts and attempt to memorize both the content and the pictures. The texts were about 4 sentences long, about topics that subjects were likely to be familiar with or would not find too burdening, and their content listed correspondences between some of the characters or objects present in them. For example, let us look at the text on Figure 2.1:

In this slide the text shows correspondences between three predators and three prey animals, and small photographs are associated with each of the characters. There were some slides in which photographs were associated with

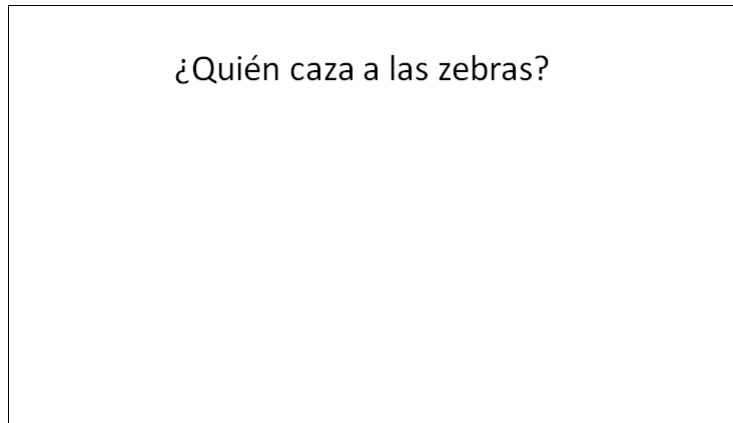


Figure 2.2: Wh-question referring back to text contents - 'Who hunts zebras?'

words that had no correspondence with anything else, this with the purpose of making the dynamic of the experiment less obvious to the subject. All the verbs in the correspondences were transitive, with one nominative argument and one accusative.

Speakers were given as much time as they needed to familiarize themselves with the contents of the slide before moving on to the next phase. When they indicated they were ready, they were presented with a WH-question about the text, asking about either the subject or the object of one of the correspondences. For example, the slide in Figure 2.2 is targeted at the subject.

Speakers were asked to give answers to the WH-questions in full sentences. At the same time, they were asked to imagine that there was somebody else present in the room who was trying to listen to their answers and could not see the text (this person's name was 'Rocio'), but sometimes she was not successful and could not fully understand the answers. Thus the speaker delivered a full-sentence answer to the WH-question as if speaking to somebody else directly. This part of the experiment elicited sentences with information focus.

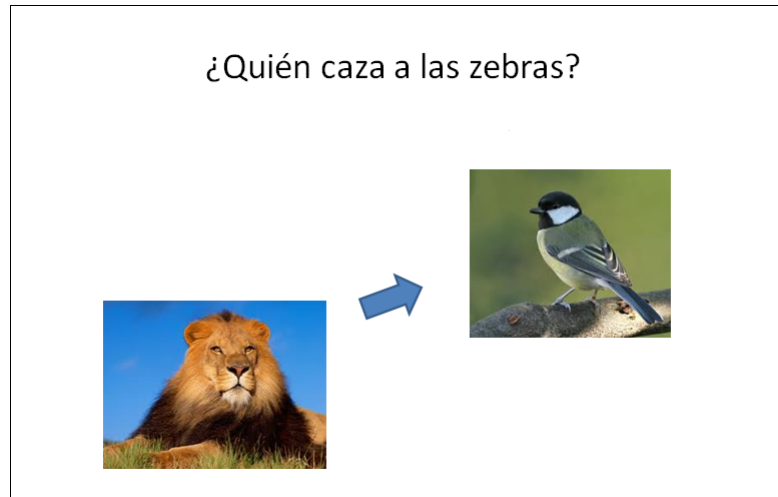


Figure 2.3: Third person's statement represented in pictures (Rocio's understanding). Possible answers: "Lions hunt zebras (OVS)"; "Lions hunt zebras (SVO)""

As soon as the WH-question was answered, speakers were told that they would see, in pictures, what Rocio had understood as their answer. One schematic representation can be seen in Figure 2.3.

A diagram such as that in 2.3 showed one of the subjects from the text, represented by its corresponding picture, placed in an accusative relationship (represented by an arrow) with one of the objects. If the Wh-question before had asked for the subject, such is the case here, the diagram displayed the correct subject with the wrong object. Conversely, if the question was directed at the object, Rocio's perception would show the correct object but the wrong subject. The purpose of this was to elicit from the speaker a correction statement directed at Rocio in which either the subject or the object was corrected, but it avoided keeping the same word as focus (in this example, the focus switches from the lion-zebra correspondence to the cat-bird correspondence, or at least the possibility that this will happen increases). Rocio's statement was presented in pictures as opposed to words in order to avoid suggesting a specific word

order to the participant when he or she offered a correction. Another precaution used to control for this possibility was to place the subject not always to the left of the object (with a left-to-right reading), but also on the right, top, bottom, or diagonally placed, with the arrow always pointing from the subject to the object.

Presented with the diagram, speakers were free to correct the statement as they wanted, and even to make multiple corrections (for example, give both the object and the subject that were missing in the diagram), as long as they used complete sentences. They were also instructed to speak to Rocio directly when doing this, and even address her by name, in order to obtain a statement as close to natural speech as possible. All subjects complied with this part of the task without inconveniences. It should be made clear that this experiment intended for speakers to correct Rocio's understanding of their answer to the Wh-question. They were explicitly told that Rocio would not always understand them, and thus they had to give a correction according to what they had just said, not the text. However, as will be clear from the results, speakers sometimes corrected Rocio according to further information available from the text. I do not believe this makes a difference for purposes of the experiment, as in both situations speakers are delivering a correction to a wrong statement using information readily available to them.

At the end of each set of slides, speakers had produced one sentence with narrow information focus (triggered by the Wh-question) and one with contrastive focus (triggered by the third party listener's wrong statement). There were ten experimental texts given in total, five with a Wh-question targeted at the object and five at the subject. There were two training rounds to make sure

speakers had understood the task, as well as three filler rounds with either a yes/no question or an adjunct Wh-question (*where* and *which*). In the experimental rounds Rocio was invariably wrong. Speakers were all native speakers of Spanish who had resided in a Spanish speaking country (Colombia) for at least 25 years. There were 14 subjects, 4 men and 10 women, between the ages of 25 and 60.

2.3 Results

The present section summarizes the findings from the experiment described, more specifically the types of syntactic constructions and prosodic peculiarities yielded by each kind of trigger, Wh-question and correction, and the frequency with which they occurred. Statistical analyses were applied to select sets of data as needed in order to test the hypotheses stated above, but these will be shown in the next section.

There were ten experimental trials for each speaker, so there were 140 trials in total. Subjects' replies were counted in if they consisted of a full sentence or construction that included all the necessary constituents (subject, verb and object). Sentences were not excluded if the speaker used the wrong word to refer to a picture (for example, if the speaker used *brother* instead of *son* when referring to the picture of a boy). A response was not included in any of these cases:

- Speaker could not remember the information after returning to the text slide many times, or he/she gave the wrong answer

Wh trigger	Focus placement	
Construction	Obj?	Subj?
SVO	65	30
OVS	0	25
Subject pseudo-cleft	0	8
Object pseudo-cleft	3	0
Inverted subject pseudo-cleft	1	2
Passive	0	3
Excluded	1	2
Total valid	69	68

Table 2.1: Wh-question trigger responses by syntactic construction

- The response consisted of a one-word answer instead of a full sentence
- A correction consisted of a negative statement (*'No, S does not V O'*)
- A correction consisted of an extended description of the facts (e.g., *'S is the wrong choice because it does not correspond to O_1 , but instead it corresponds to O_2 '*).

The following subsections summarize the data obtained from each of the triggers, and serve as brief surveys of the various possible ways in which focus is expressed in Spanish.

2.3.1 Information focus: The Wh-question trigger

For this part of the experiment, 140 responses were recorded and four were excluded, yielding a total of 136 valid data points. Breaking down the valid responses into those that answered to an object-oriented Wh-question and a subject-oriented one, the numbers indicating speakers' choices of syntactic constructions can be summarized in Table 2.1. The meaning of each of the constructions will be explained below.

SVO and OVS are the two kinds of syntactic constructions reviewed in Chapter 1. The remaining abbreviations, however, require further clarification.

Responses marked as ‘Subject pseudo-cleft’ are generally those in which the speaker put the subject into a higher conceptual category (e.g. ‘animal’ as a super-category of ‘lion’), here represented by NP, put the verb and the object into a clause subordinate to this NP, and finally linked this description to the subject’s identity with a copula.

- (5) El animal que caza a las zebras es el león
The animal that hunts acc the zebras is the lion
‘The animal that hunts zebras is the lion’

Responses marked ‘Object pseudo-cleft’ are similar, except the object is what is generally put in a higher conceptual category and linked with a copula.

- (6) El licor que hacen los cubanos es el ron
the liquor that make the Cubans is the rum
‘The liquor that Cubans make is rum’

I say these pseudo-clefts are “generally” headed by an NP because this group also includes Wh-headed NPs, for example, ‘(That) *who hunts zebras is the lion*’. The equivalent construction in Spanish has the same word order as in English, except for the case of focused objects, in which the subject surfaces after the verb, as in (6).¹ I will be pooling all the realizations of pseudo-cleft heads (NPs,

¹According to Dominguez (2004), the inversion of the subject and the verb in this cases is a known property of embedded clauses, and it does not signify a change in information structure. From a native speaker perspective, the sentence might as well be *El animal que el león caza es la zebra*, with the same meaning, but this version is less likely to occur.

Wh-words, pronouns) into the same construction category.

- (7) a. Quien caza a la zebra es el león
who hunts acc the zebra is the lion
'Who hunts zebras is the lion'
- b. Lo que hacen los cubanos es el ron
that which make the Cubans is the rum
'What Cubans make is rum'

Another construction appearing in the table is the 'Inverted subject pseudo-cleft', with the subject as an isolated NP and the predicate made into a descriptive relative clause, such as in '*The lion is who hunts zebras*'. The word order in Spanish is again the same as in English.

- (8) El león es quien caza a las zebras
the lion is who hunts acc. the zebras
'The lion is who hunts zebras/ Lions are who hunt zebras'

Finally, there were constructions in which the verb was passivized, therefore the object appeared as a grammatical subject on the left, and the subject appeared in a "by-phrase" on the right edge.

- (9) La zebra es cazada por el león
the zebra is hunted by the lion
'Zebras are hunted by lions'

We can see preliminarily that the amount of focusing strategies realized by simple or no movement (SVO, OVS) is predominant over the amount of alterna-

tive, often multi-clausal strategies. However, we can observe in the latter category that focalization of the object and the subject is divided sharply in terms of strategies, at least judging by the rough numbers in this sample. Excluding SVO and OVS, the most frequently occurring focus constructions are cleft-like, that is, they consist of singling out the relevant constituent in a small clause united to the remainder of the statement's content with a copula. Although this thesis is not intended as a comprehensive survey of focusing strategies, it is relevant to notice such patterns and realize that focus marking is not limited to the binary choice of movement vs. lack of movement often emphasized in the Spanish literature. More focusing strategies will be discovered in the next section.

2.3.2 Contrastive focus: The correction trigger

This part of the experiment, like the first one, yielded a total of 140 responses, but due to the fact that speakers were free to correct the third party listener's statement as they wanted, there were many instances of unacceptable responses, especially long descriptions and negations.

In addition to a greater variety of responses than with the Wh-question trigger, it was observed that speakers often provided multiple corrections to the same diagram. For example, returning to the predator-prey diagram (from Figure 2.3), a speaker could give the Spanish equivalent of either one or both of the following two corrections (the Spanish translation of these sentences could have multiple surface realizations).

- (10) a. Lions hunt zebras

b. Cats hunt birds

These responses, because they exhibited combinations of many kinds of syntactic, prosodic and other alternative strategies, were recorded as two responses each. There were 35 two-sentence responses, yielding 70 tokens from these trials. Excluding 23 tokens, this comes up to a total of 152 data points considered as valid from the correction stimulus.²

It is not very relevant in this part of the experiment whether the original Wh-question was object- or subject-oriented, as speakers were free to correct any part of the wrong statement as they considered necessary. In practice, this could refer back to the answer they had just given or to the content of the initial text in general. Instead, data from the correction sentences were coded in such a way that they reflected which item in the mistaken picture diagram they were correcting, the object or the subject. For example, the Wh-question from the slide in Figure 2.3 should yield a reply that focuses the subject, that is, the lion. However, the picture diagram did not ask to focus any constituent in particular, thus if the answer focused 'zebras' (as in (10-a)) it was coded as object focus, or if it focused 'cats' (as in (10-b)) it was coded as subject focus. The results are summarized in Table 2.2.

The tokens collected as correction sentences exhibited two additional constructions not seen in the Wh-question triggered data. One of these is very much the same as the cleft construction familiar to English speakers, for example, *'It's*

²It is certainly an arbitrary choice that two-sentence responses were treated as two different tokens, and it is clear they will not be completely independent statistically speaking, yet it is certainly more desirable to include as much information from the correction response as we have available. Whether it makes a difference in terms of either word order or prosody preference that a response contained one or two sentences is a problem to be investigated in further work.

Correction trigger	Focus placement	
Construction	Obj?	Subj?
SVO	68	18
OVS	0	14
Subject pseudo-cleft	2	16
Object pseudo-cleft	1	0
Inverted subject pseudo-cleft	3	3
Passive	1	2
Obj headless cleft	8	2
Subj headless cleft	1	7
Subject Cleft	1	5
Excluded	11	12
Total valid	85	67

Table 2.2: Correction trigger responses by syntactic construction

lions that hunts zebras'. This construction is called Subject Cleft due to the fact that the subject was always the constituent embedded in the cleft in this data set. Thus, such sentences as that is (11) were observed.³

- (11) Es el león el que caza a las zebras
 it.is the lion that which hunts acc. the zebras
 'It is lions who hunt zebras'

The other additional construction which only surfaced for the purpose of correction was that which I will call 'Headless cleft'. The reason for this is that, as opposed to both pseudo-clefts and reversed pseudo-clefts, this construction is not headed by an NP, Wh-word, or pronominal element. Instead, it contains only the core elements of the basic sentence (to be clefted), along with a finite form of the Spanish verb to be, *ser*. What sentences with this construction do is insert the verb 'to be' right before the focused element, presumably to cause subordination.

³Which does not mean a clefted object is impossible

(12) A las zebras las caza es el león
 acc. the zebras them hunts is the lion
 'Lions_F hunt zebras'

(13) El león caza es a las zebras
 the lion hunts is acc. the zebras
 'Lions_F hunt zebras'

The version of 'to be' that is used can vary according to tense and number.

(14) A las zebras las cazaban eran los leones
 acc. the zebras them hunted were the lions
 'Lions_F hunted zebras'

Whether this construction is readily comparable to others in English, specifically to clefts, is a matter for further research, but the similarity is apparent. Like typical clefts, these sentences also give a sense of exhaustivity and seem to presuppose the existence of the element under focus. One way of looking at this construction is as a cleft in which the non-clefted information has been topicalized:

(15) As for hunting zebras, it's lions who do it.

A quick glance at the numbers displayed in Tables 2.1 and 2.2 reveals certain similarities between the strategies used for purposes of expressing both kinds of focus. SVO, the canonical word order, is always the most widely used strategy, and SVO and OVS are roughly equally divided as simple, single-clause strategies for focusing subjects. The only major difference that can be noticed at

this point is that contrastive focus makes use of a greater number of alternative constructions. Section 2.4 will show more precise analyses of the data observed here with the use of statistical tests.

While the last two subsections have centered on showing the distribution of different syntactic constructions in the data, the next section will take care of laying out information pertaining to the prosodic qualities of some key data sets within the sample.

2.3.3 Phonetic Data

The information shown so far about the different word orders obtained from this experiment does not tell the whole story about focus marking strategies. One of the main indicators of focus association in Spanish (and in some languages the only indicator) is prosody, and as it has been shown by authors like Dominguez (2004) and Face (2002), specific prosodic contours have been identified as indicators of non-neutral information structure in this language. According to phonetic experiments undertaken by these two authors, late alignment on the subject, or alignment of the highest pitch with the syllable right after the subject's main stress (L^*+H), is an indicator of wide information focus, or neutral intonation, in SVO sentences. After this, the pitch of the utterance decreases progressively, with smaller pitch rises on each word's stressed syllable, until it reaches its lowest value on the last word, the object. Thus, an SVO sentence with neutral intonation should look as in 2.4 (the word *molinero*, 'miller', carries main stress on the 'e').

The prosodic indicator of a focused subject in an SVO sentence is then early

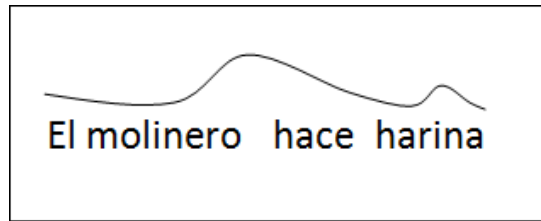


Figure 2.4: Neutral intonation - 'The miller makes flour'

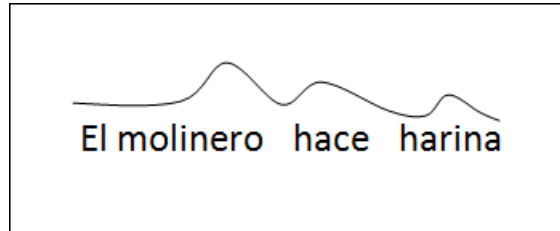


Figure 2.5: Subject focus - '[The miller_F] makes flour'

alignment, or the coincidence of highest pitch with the subject's tonic syllable (L+H*). The object, like in neutral sentences, has a lower pitch peak on its stressed syllable. Such a contour would look roughly as in 2.5.

Of course, because much of the Spanish literature has assumed that early alignment on a sentence-initial subject can only signify contrastive focus, a contour like that in 2.5 is predicted to occur only in response to a correction situation in terms of the present experiment.

Having determined the kinds of prosodic contours expected to obtain from an SVO word order depending on its information structure, it is now possible to formulate some hypotheses about the kinds of tones to be found in the data. These hypotheses and the subsequent data sets will not include information about prosody in OVS sentences or in alternative constructions. The reason for this is that we will only be concerned with the role of prosodic marking in otherwise unmarked sentences, which in terms of word order would always be

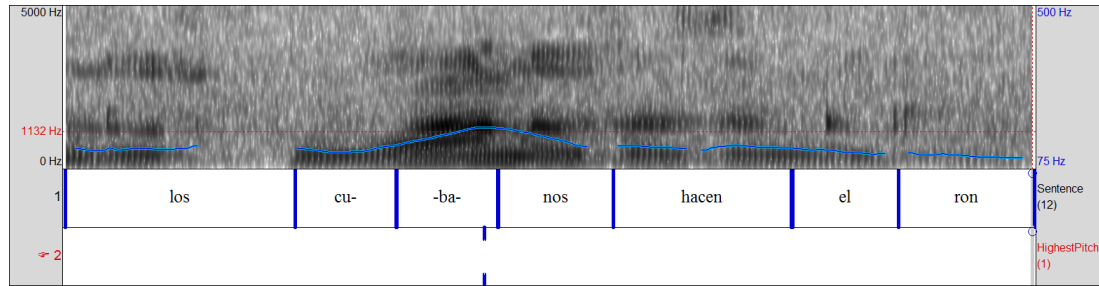


Figure 2.6: Spectrogram of early alignment (L+ H*). Sentence: *Los cubanos hacen ron* 'Cubans make rum'

SVO.

Departing from assumptions from the literature, the first hypothesis to test is whether SVO with early alignment is in fact a strategy used exclusively to mark contrastive focus. Conversely, it is necessary to investigate whether late alignment on the subject is in fact only found in neutral intonation, or whether it is also an intonation used in Wh-answers or corrections.

The phonetic data presented here was obtained by loading each token's audio file onto the speech analysis software *Praat* (Boersma and Weenink 2012), which extracted both pitch peak location and height (in Hz) from subjects in SVO constructions. A token was coded as exhibiting early alignment when the pitch peak in the region between the subject and verb was found on the subject's tonic syllable. The spectrogram in Figure 2.6 illustrates this situation with a contrastive token. The marks on the lowest tier indicate highest pitch around the relevant area.

A token was considered to exhibit late alignment when, in the region between the subjects and the verb, the pitch peak tended towards the end of the subject and the beginning of the verb, as illustrated in Figure 2.7.

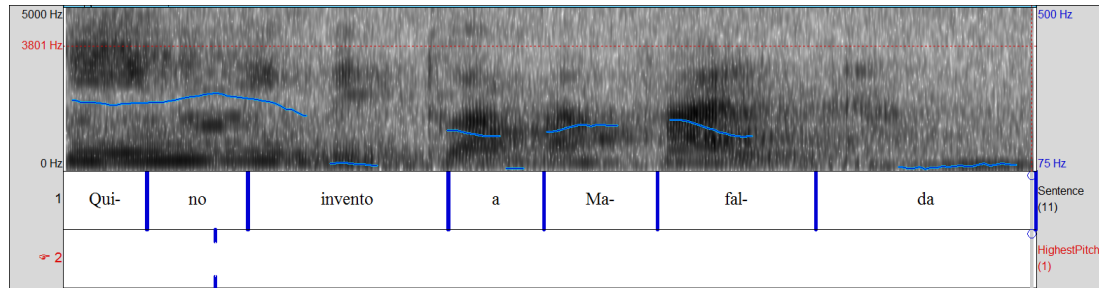


Figure 2.7: Spectrogram of late alignment (L*+ H). Sentence: *Quiño intentó a Mafalda* 'Quino created "Mafalda" (a comic strip)'

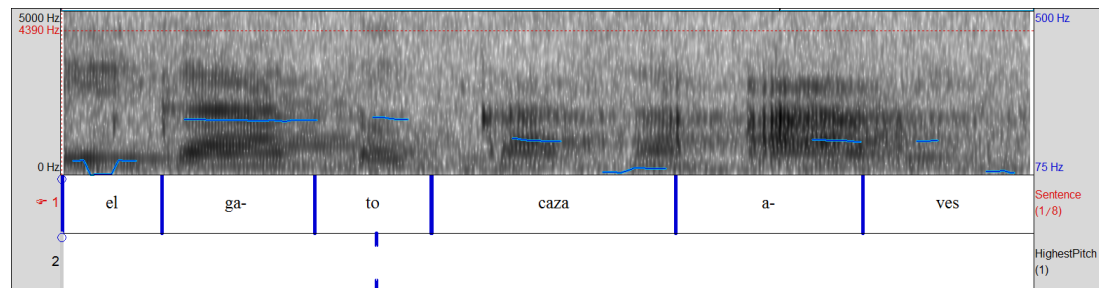


Figure 2.8: Spectrogram of non-focused high-pitched subject. Sentence: *El gato caza aves* 'Cats hunts birds'

It is also very important to mention that many SVO tokens that seemed to have a high pitch on the subject's tonic syllable did not instinctively sound focused, from a native speaker's perspective. The reason for this can be a dialectal difference between the data used here and that used in the phonetic literature, or that these cases fulfill an independent function that is not under study here. Roughly speaking, the difference in pitch between a focus and these instances is that foci exhibit a sharper fall after the pitch peak, while the other cases remain on a high pitch for longer and have a smoother decline. Such instances will be classified here within the late alignment category, as their prosody is clearly not that of focused subjects, but in a spectrogram they can look similar to the latter and it is important to make the distinction clear.

The decision of how to classify a token that exhibits high pitch on the sub-

Pitch on SVO responses		
Pitch on S	Focus type	
	Information	Contrastive
Late alignment	23	13
Early alignment	7	5

Table 2.3: Pitch contour on focused S according to focus type

jects, then, is based partly on a native speaker's intuition of what "sounds focused", and future work will have to develop a more precise phonetic measure to distinguish focused from neutral now that this third kind of contour is expected.

Table 2.3 shows the phonetic data collected from both the Wh-question and correction stimuli when the subject was being focused in SVO responses.

As this table shows, there were occurrences of both pitch accent types in both focus environments. The next section will test the hypotheses formulated about prosody as a focus marker in Spanish with the use of statistical tests.

2.4 Statistical Analyses

The aim of this section will be to test the hypothesis stated on (2), broken down into (3) and (4), repeated below.

(16) Main Hypothesis

H_0 : There is no significant difference between frequency patterns for the realization of subject information focus and subject contrastive focus.

Sub-hypotheses:

- (17) H_{0-1} : SVO and OVS realizations of focused subjects are drawn from the same distribution under both information and contrastive contexts.
- (18) H_{0-2} : Accented and unaccented focused subjects of SVO tokens are drawn from the same distribution in both an information and a contrastive context.

It is necessary to mention at this point that due to the fact that object-focusing strategies yielded only SVO responses, no tests will be performed on focused object data with respect to differences between strategies.⁴ However, focused object data will be used here as a point of comparison with focused subject data in one of the tests.

A first step in comparing the responses to the Wh-question and the correction triggers is to compare their distributions as a whole. That is, we need to ask whether the results found for each trigger could be part of a common distribution, or whether there exists a real difference between the two distributions. For this purpose, a χ^2 test of independence was performed between construction types (SVO, OVS, Clefts, etc.) for each focus placement (object vs. subject), and trigger (Wh-question vs. correction). All nine constructions observed in the experiment were used in the test. The Table in 2.4 illustrates the data points that were compared, and Figure 2.9 illustrates these data. The χ^2 test found a sig-

⁴The question of whether objects carry a higher pitch when focused in SVO constructions was investigated by Dominguez (2004). According to her study, a neutral SVO sentence and an object-focused SVO sentence are indistinguishable in terms of prosody (p.138). As a native speaker, I must say I focused objects do sound instinctively more prominent.

Construction	Trigger			
	Wh		Correction	
	Obj	Subj	Obj	Subj
SVO	65	30	68	18
OVS	0	25	0	14
Subject pseudo-cleft	0	8	2	16
Object pseudo-cleft	3	0	1	0
Inverted subject pseudo-cleft	1	2	3	3
Passive	0	3	1	2
Object headless cleft	0	0	8	2
Subject headless cleft	0	0	1	7
Subject Cleft	0	0	1	5
Excluded	1	2	11	12
Total valid	69	68	85	67

Table 2.4: Comparison of syntactic constructions across triggers and focus placement (subject or object)

nificant difference at the 0.05 level between the two distributions, with $\chi^2=37.56$ and $p=0.0010$.

As we are primarily concerned with the distribution of constructions focusing subjects, we can also perform a similar test that targets subject data only. This test yields $\chi^2 = 23.16$, $p= 0.0016$, also very significant at the 0.05 level.

This test has determined that the distributions of the two types of responses is different, which leads us to reject the null hypothesis in (16). However, this general test does not tell us about the locus of difference, that is, it does not tell us which construction(s) is/are significantly different across the two triggers and which are not. In order to address this question, which would address the sub-hypotheses in (17) and (18), it is necessary to conduct a series of sub-tests. First, we will address the OVS construction in order to find out whether it is used significantly more often under one condition than the other. A χ^2 test of independence was performed on the OVS data against non-OVS data across both triggers. Only focused subject data was included here, as there were no

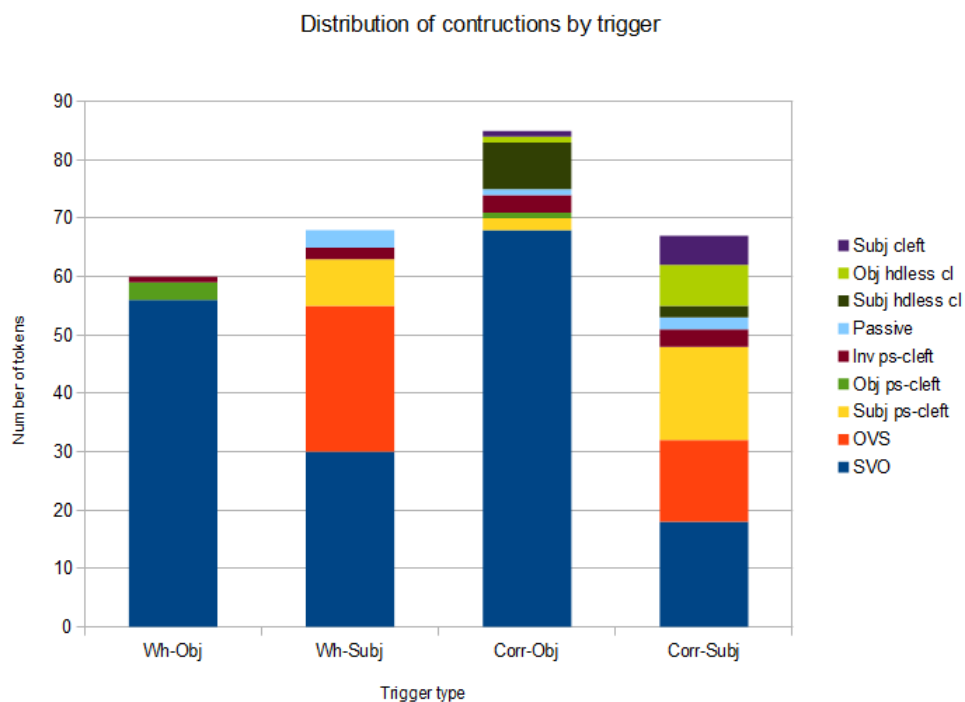


Figure 2.9: Each bar shows the amount of tokens found of each syntactic construction under each trigger

Word order	Trigger type	
	WH-Subj	Correction-Subj
OVS	25	14
non-OVS	43	53

Table 2.5: Amount of OVS responses in focused subject data versus amount of non-SVO tokens

OVS tokens in the focused object data.

The test yielded $\chi^2=4,137$ and $p=0.042$, mildly significant at the 0.05 level. This means that the Wh-question trigger yielded OVS responses slightly more frequently than the correction trigger. Given this result, we can reject the sub-hypothesis in (17), although it is important to note that the distributions of OVS responses have not been shown to differ radically, and there is certainly not an absolute mapping between the Wh-question trigger and OVS. Thus, it seems

Word order	Trigger type	
	WH-Subj	Correction-Subj
SVO	30	18
non-SVO	38	49

Table 2.6: Amount of SVO responses versus Non-SVO responses in focused subject data

that OVS as a realization of information focus is more a statistical tendency than a strict correspondence, a point that will be elaborated on in Chapter 3.

We can now turn to the SVO word order to determine whether there is a significant difference between the two triggers in this respect. A similar test to that performed for OVS was applied on the SVO data, again taking only the relevant focused subject data for comparison. The numbers are in Table 2.6

The test yielded $\chi^2=4.38$ and $p=0.036$ at the 0.05 level. This is, again, a slightly significant result differentiating SVO under information and contrastive focus. However, as there are more tokens of SVO in total occurring under the Wh-question trigger, the significance of this result would link a higher frequency of SVO with information focus, contrary to assumptions from the literature. Thus, this result also shows evidence against the assumption that SVO is connected to contrastive focus, and if we want to take the slight significance seriously, the evidence would point in the opposite direction, that is, it points at SVO being used more often under the WH than under the Correction condition.

In addition to the results just obtained, if we consider only the distribution of SVO and OVS responses across triggers, we see that these distributions are not significantly different ($\chi^2 = 0.024$, $p = 0.877$), that is, not taking into account alternative constructions, the distribution of occurrences of SVO and OVS across triggers appears to be very similar, meaning that one type of construction does

Pitch type	Trigger type	
	WH-Subj	Correction-Subj
Late alignment	23	13
Early alignment	7	5

Table 2.7: Pitch accent distribution for subjects in SVO focused subject data

not characterize any one type of focus.

The last tests, although revealing something about SVO, do not address the sub-hypothesis in (18). For this purpose, we have to again isolate the focused subject data and tease apart subjects with early alignment (L+H*) from those with late alignment (L*+H). Remember that early alignment on the subject is correlated in the literature with contrastive focus. The numbers are in Table 2.7

A new χ^2 test of independence was performed on these data, yielding $\chi^2=0.118$ and $p=0.7306$, a non-significant result at the 0.05 level. This indicates that the distribution of accented vs. non-accented focused subjects in SVO constructions does not differ, a conclusion that does not reject the null sub-hypothesis in (18). These focused subject data were compared to unfocused subject data from the object focus SVO responses obtained from the experiment. Recall that the experiment did not include a control group of neutral sentences (an issue that should be corrected in future replications), and thus the focused object sentences served as a point of comparison with focused object SVO sentences. These two data sets were compared in order to test whether the distribution in the table above is indeed a property of focused subjects, or rather if the same distribution of accented vs. unaccented occurrences could be found in non-focused subjects as well. The purpose of this comparison is again to indirectly test whether early alignment is a reliable marker of (contrastive) focus in Spanish. Relevant numbers for object data are on Table 2.8

Pitch type	Trigger type	
	WH-Obj	Correction-Obj
Late alignment	62	65
Early alignment	3	3

Table 2.8: Pitch accent distribution for subjects in SVO focused object data

This test resulted in $\chi^2 = 18.915$ and $p = 0.00028$, a very significant result at the 0.05 level. This serves to demonstrate that the distributions of focused and unfocused subjects is in fact different (with both classes having low counts, but only the latter having a significantly lower count), and that early and late alignment pitch accents are not just coexisting variants that can occur on subjects under any circumstance. This said, it is also not the case that late alignment is a reliable marker of focus on subjects.

Given that, according to the literature, it was expected for contrastive focus to have a higher incidence of early alignment on the subject, it is possible that contrastive focus tokens actually have higher pitch rises than information focus tokens, that is, it is possible that early alignment exhibits a higher pitch rise in average when used for purposes of contrast. In order to test this, I have taken the average pitch rise of all the SVO&Early subject focus responses for each of the focus types, and performed a t-test to determine whether one mean rise was higher than the other. The mean pitch rise was computed as [*mean F0 in SVO utterance - maximum subject F0*]. This test yielded $t=1.085$, $p=0.306$, a non-significant result, meaning that the pitch rise on focused subjects was not found to be higher under either focus type.

The t-test performed yielded the following results: $t=0.588$ and $p=0.284$, not significant at the 0.05 level. This test rejects the hypothesis that the rise in pitch for contrastively focused subjects is higher than that on subjects with informa-

Focus type	n	Mean F0 rise (Hz)
Contrastive	5	44.508
Information	7	53.393

Table 2.9: Mean pitch rise (mean utterance F0 - maximum subject F0) on SVO subjects with early alignment, by focus type.

Constructions from WH Trigger		
	Focus placement	
One-clause	65	55
Multi-clause	4	13

Table 2.10: Number of One-clause vs. Multi-clause constructions obtained from Wh-question trigger.

tion focus, or in other words, that more prosodic prominence is given to contrastive focus than to information focus.

The tests performed so far have compared OVS and SVO, and they have found that only the distribution of the former exhibits any real significance. The last step in comparing the overall distribution of responses is addressing the remaining alternative constructions, including clefts, pseudo-clefts and passives. I will label these types of constructions here as "multi-clause", as this is their usual content, and SVO and OVS will be labeled as "one-clause" constructions. In order to determine whether the frequency of multi-clausal constructions makes a difference in the distributions of the two triggers, another χ^2 test was applied to the data in Tables 2.10 and 2.11.

The test yielded $\chi^2=23.56$ and $p=3.08^{-5}$, a significant result at the 0.05 level. If only subjects are taken into account, the result is also very significant ($\chi^2 = 16.16$, $p = 5.829^{-5}$). This means that a multi-clausal construction is significantly more likely to occur under a contrastive focus than an information focus environment. This observation points at another reason why the overall distribution of constructions showed to be significantly different, and in terms of statistical

Constructions from Correction Trigger		
Focus placement		
Construction	Obj	Subj
One-clause	68	32
Multi-clause	17	35

Table 2.11: Number of One-clause vs. Multi-clause constructions obtained from correction trigger.

significance, this is probably the biggest reason for the difference.

The next section will discuss the results obtained from the experiment and the statistical tests laid out above.

2.5 Discussion

The experiment described at length in this chapter was created in order to test empirically some widely held assumptions about Spanish focus constructions. The overarching assumption is that information focus, that which obtains as a response to a Wh-question, is expressed with different grammatical constructions than contrastive focus, that which contrasts, corrects or emphasizes (Zubizarreta 1998) the value of a given variable in a statement. The two types of focus are assumed to have different semantic representations and pragmatic functions, and thus to give rise to different surface structures at least in some languages, like Spanish.

The results obtained from the experiment challenge this assumption. Previous literature has assumed that syntactic marking, with displacement of the subject to the rightmost edge of the sentence (resulting in VOS or OVS), is a property of information focus, therefore such word orders should never be ob-

served in a correction environment like that simulated in this experiment. The data, however, shows that OVS occurs only slightly more frequently under information focus, and that it is by no means the only possible way of marking this type of focus in Spanish. Similarly, the previous assumption was that the prosodic strategy of focus marking, exhibiting a canonical SVO word order, was for exclusive use of contrastive focus, and in the same way it was found that SVO has barely any correlation with one type of focus or the other.

With respect to the use of pitch accent, it was observed that the distribution of early alignment (L+ H*) vs. late alignment (L*+ H) was similar under both types of focus. Recall that any occurrence of accented subjects under information focus is predicted by the literature to be impossible, which makes the last finding quite surprising in light of previous assumptions. What I would make of this lack of accent on a focused subject is not just that subjects can use this strategy regardless of the type of focus, but also that speakers often fail to mark focus in any way and deliver neutral statements when a marked one would be expected. The reason for this might relate to the artificial nature of an experimental setting, but it may also be true that speakers often under-specify their information structure. This will be left as an open question in this thesis.

Past approaches to focus in Spanish have been inflexible with their assumptions of what constructions are possible to signify given information structures, and this does not exclude previous experiments conducted on this subject. In particular, Dominguez (2004) conducted an experiment in which subjects were asked to read prepared dialogues where specific sentences were tagged as representing either information or contrastive focus. The aim of this experiment was to determine the pitch accent used under one situation or the other. An

example of such a dialogue is shown below.

(19) Q: Qué ha pasado?

“What happened?”

A: [_F Los centristas han ganado las elecciones]

“The center-party has won the elections”

Q: Los independentistas han ganado las elecciones?

“The separatists have won the elections?”

A: No, [_F los centristas] han ganado las elecciones

“No, the center-party has won the elections”

The problem with an experimental design of this sort is that the experimenter determined in advance which word order should represent each type of focus. Dominguez was explicit about putting all her information focus tokens in the VOS word order and all her contrastive focus tokens in the SVO order. In this way, this experiment missed crucial information, like the fact that neither word order is actually restricted to either type of focus, or even the fact that speakers overwhelmingly prefer to topicalize the object when delivering subject-final responses (thus OVS is strongly preferred over VOS, to the extent that there were no natural occurrences of VOS in the experiment described here). To make matters worse, especially with respect to the quest for the preferred pitch accent, the pre-training for this experiment consisted of mini-dialogues in which

the experimenter instructed speakers on the expected way of responding to a given stimulus. In sum, this experimental design greatly decreased the chances of receiving natural responses from speakers.

The advantage of the present experiment was that it employed a technique of elicited production, in which speakers had, for the most part, the freedom to give a natural response (to the extent that this is possible under experimental conditions). This resulted in a multitude of observed focus-marking strategies, and in the clear observation that specific strategies do not seem to be tied exclusively to either type of focus-sensitive situation.

It is fair to say, however, that not all previous assumptions were challenged. As mentioned before, OVS had a higher frequency under the Wh-question trigger, and there was an overall significant difference between the distributions of the two kinds of focus. This observation leads us to a supposition that will be an overarching theme in the remainder of this thesis: that focus is a construction- and function-independent mechanism for fixing attention on a given element, and that what to this day has been assumed in the Spanish literature to be absolute ties between one focus type and one construction are in fact statistical tendencies. In the same way, we observe that alternative constructions are significantly preferred as strategies for contrastive focus marking, which can potentially tell us something about the nature of this type of focus-associated function. It is in fact very likely to be the case that the semantic representation of focus makes no distinction between different types, and that the unequal distributions of focusing strategies tagged as representing one type or another are actually a reflexion of different pragmatic functions, or the product of disambiguation strategies aimed at making language processing less burdening. This

is the main question to be pursued in the next chapter.

CHAPTER 3

A UNIFIED SEMANTIC APPROACH TO FOCUS IN SPANISH

The findings of the last chapter reveal that certain long-held assumptions about focus in Spanish have only been based on grammaticality judgments by native speakers, and no other experimental methods have been applied to test these assumptions. This lack of variety in methodology has resulted in theories about the structure of focus constructions that make imprecise predictions. We can see this problem by revisiting Zubizarreta's work. One of the assumptions she upholds is the narrowly defined function of the OVS word order as the only possible response to a question like that in (1):

- (1) Quién lavó los platos?
 who washed the dishes?

Los platos los lavó Luz
the dishes them washed L.

This prediction was not only refuted here experimentally, but also by other native speaker authors like Dominguez (2004), who admits that the word order OVS lends itself very well to signifying contrast, as in her example:

- (2) Was it Antonio who saw the accident?

No, lo vió Carlos
no, it saw Carlos

'No, Carlos saw it'

The purpose of this chapter is to address the impression of many authors that specific focus-associated grammatical constructions are related to specific pragmatic meanings like contrast or new information delivery, and reconcile it with the experimental results presented here as well as with some findings from the literature on processing. As it was found in the experiment that the meaning-to-construction mappings seem to reflect rather a slight statistical tendency, I will attempt to incorporate a statistical component into one existing formal approach to the OVS focus phenomenon, namely that from Büring and Gutierrez-Bravo (2002), which utilizes Optimality Theory. Following this, I will demonstrate that a standard semantic approach to focus representations, Question Under Discussion (QUD), can provide accounts for both information and contrastive/correction focus for Spanish in the same way as in English, using the same primitives for both, and that the differences in surface structure, as well as the slight differences in meaning, can be explained by focus-independent factors such as ease of processing.

3.1 Adaptation of a previous approach

Many of the current approaches to focus construction variation in Spanish have a few aspects in common. Outside the information vs. contrast distinction emphasized until now, there is also the way in which these approaches justify the need for a focused subject to end up sentence-finally. As seen in Chapter 1, Zubizarreta was the first to report on the idea that movement resulting in the subject being sentence-final could be phonologically grounded (she calls it P-movement). This idea states that, in information focus scenarios, it is mandatory for the focused element to align with the sentence's nuclear stress, which

is determined to occur always at the end of the sentence. Thus, a focused subject is licensed to surface sentence-finally - whatever the syntactic means for this movement to happen - due to prosodic requirements. This same intuition was taken up and further formalized, as we saw before, by Büring and Gutierrez-Bravo (2002), who utilize an Optimality-theoretical framework to capture Zubizarreta's observations. I will repeat here the constraints involved in the OT analysis, as well as the relevant tableau, for reference. Recall from Chapter 1 that in Spanish phonological phrases (phonP) are assumed to consist of a single prosodic word, and that put together they make up intonational phrases (iP).

(3) FOCUS PROMINENCE (FocP)

Focus is most prominent

-If α is a prosodic constituent at level n which contains a syntactic node that is F-marked, α is the head of the prosodic category at the level $n+1$ that contains α .

(4) iP-Hd-right

Align the right edge of every iP (intonational phrase) with the right edge of the phonP that is the head of the iP.

-Violated when the phonP that receives the nuclear accent is not right-aligned with the iP.

(5) PrWd=phonP Align the right edge of each prosodic word with the right edge of a phonP.

Violated once for every lexical head (N, V, ect.) whose right edge is not the right edge of a phonP.

Candidates	FocP	iP-Hd-right	PrWd=phonP	SO
(S _F VO)			N!V	
(S _F) (V) (O)	*!			
(S _F)(V)(O)		*!		
→(V)(O)(S _F)				*

Table 3.1: Winning candidate uses syntactic strategy

(6) SO

The subject is structurally more prominent than the object.

-Violated when the subject does not asymmetrically m-command the object.

(7) FocP, iP-Hd-right > PrWrd=phonP > SO

We saw earlier that this analysis offers a way of accounting for OVS in Spanish while offering a set of constraints that, were their ranking to change, would yield the order preferred in English and other languages. However, in light of the experimental evidence presented here, it is no longer desirable to predict the non-canonical word order 100% of the time. In order to accommodate the new findings, this Optimality-theoretical approach would benefit from including some of the machinery created to deal with variation in this framework.

Several devices have been added to the Optimality Theory framework in order to account for the phenomenon of variation. A very simple possibility that the Buring and Gutierrez-Bravo approach could integrate with is that of partial rankings (Anttila and Cho 1998). A partial ranking is one in which certain constraints are not determined to be either higher or lower than certain others, thus in any given utterance an unranked pair of constraints C1 and C2 can yield

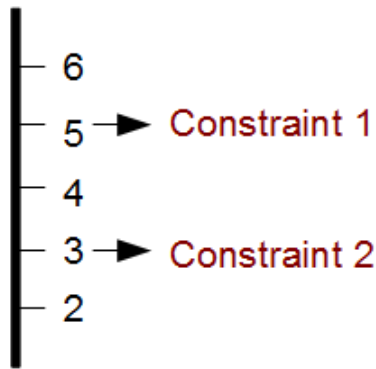


Figure 3.1: Constraint Scale according to Boersma (1997)

the order ($C1 > C2$) or ($C2 > C1$). This device, however, does not give enough information about how likely a given outcome is to occur. For example, given the rough numbers from Chapter 2, OVS seems to occur as a response to a Wh-question about 37% of the time. In order to model this statistical likelihood, it would be wiser to propose the integration of a framework in which constraints have a certain probability to be ranked higher or lower than others in a given utterance.

Boersma (1997) describes a stochastic model of Optimality Theory, in which constraints are understood as occupying a certain position along a linear scale, with each constraint being associated with a real number, and constraints can move up or down this scale as they are either promoted or demoted. Figure 3.1 illustrates a pair of mutually ranked constraints as viewed in this framework.

The number assigned to each constraint represents the mean place of evaluation, and each constraint is assumed to be represented by a normal distribution with a standard deviation of 1. This means that the domain of evaluation of Constraint 1 actually spans higher and lower than 5, its mean, and can thus,

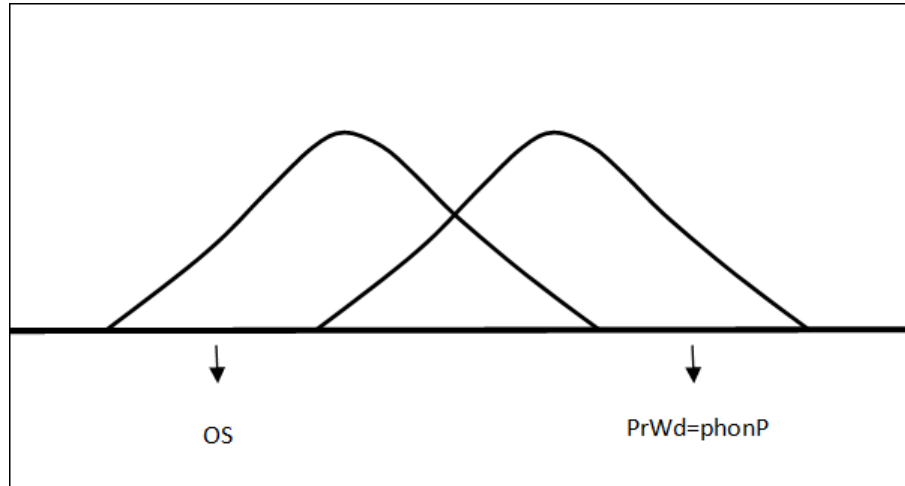


Figure 3.2: Placement of constraints along evaluation scale

with each new utterance, be evaluated at different places with different probabilities. When the distributions of two constraints overlap, even partially, there is a space along the scale where variation is more likely. For example, referring again to the diagram above, a given utterance can assign a value of 4.5 for Constraint 1, and of 4.0 for Constraint 2, yielding the ranking $C1 > C2$, but given that the two constraints overlap at this area the values at evaluation have a certain likelihood of being reversed, yielding $C2 > C1$. The diagram in Figure 3.2 gives a representation of overlapping constraints.

We can understand the bell curve to the left to be the normal distribution of the constraint 'SO' in the original OT model. The bell curve to the right represents the constraint 'PrWd=phonP'. The area of overlap represents the places where variation can occur.

As it is clear from the diagram, most of the space under both curves does not contain an overlap, which means that more often than not OS will be strictly ranked higher than PrWd=phonP. However, when a given utterance randomly

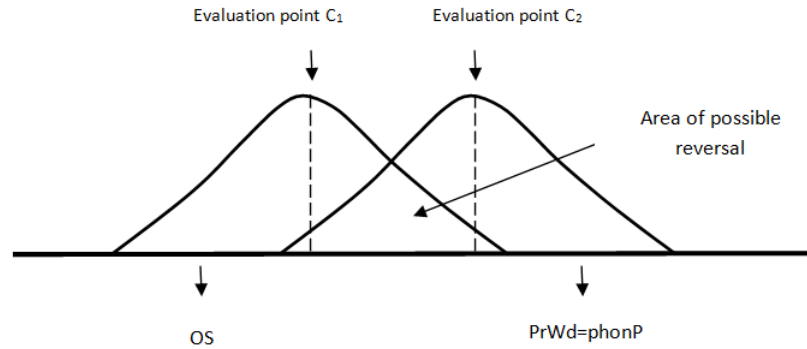


Figure 3.3: Points of evaluation where reversal is more or less likely to occur.

assigns a value to a constraint in an area of overlap the likelihood of a reversed ranking increases. In the graph below, the evaluation point for the first constraint, OS, occupies a space where there is a better chance for it to rank higher, and conversely the evaluation point for PrWd=phonP gives it a higher chance to rank low. However, if the evaluation point is randomly assigned to the area of overlap for both constraints there is a certain likelihood that the evaluation value of OS will be lower than that of PrWd=phonP, resulting in a reversed ranking. This theory predicts that as constraints become closer and overlap increases it becomes more and more likely for the point of evaluation to give both constraints an equal chance of ranking higher. This is shown in Figure 3.3

With this idea in mind, the same ranking from Büring and Gutierrez-Bravo (2002) can be revised to allow for both OVS ($\text{PrWd=phonP} > \text{OS}$) and SVO ($\text{OS} > \text{PrWd=phonP}$), with the caveat that each would have a chance to occur only in a given percentage of all utterances.

Although using stochastic Optimality Theory can model the fact that subject-final sentences as response to Wh-questions are more of a statistical tendency than a strict mapping, the OT approach offered by Büring and Gutierrez-Bravo

is still not enough to accommodate all the observations from Chapter 2, more specifically that information and contrastive focus do not seem to differ radically in terms of surface realizations, and thus there do not seem to be different specific syntactic and/or phonological rules that produce one kind of focus or the other. At the base of this approach are the assumptions that OVS can only occur as an answer to a Wh-question, and that this is licensed by the need to align focus with main prominence on the right edge. An account of contrastive focus, as seen in Chapter 1, could involve the use of a different focus feature specific to contrast situations (F[+contr]) which is immune to the effects of iP-Hd-righ, but this would also assume that there are fundamental differences in surface realization that stem from fundamental differences in the rules that generate them.

To account for the experimental data, it is necessary to take an approach with different assumptions, specifically that there is no initial difference between information and contrastive focus in terms of surface realization, as there is little evidence for it. The next section will propose that Spanish can have a unified semantic approach to focus, in which the pragmatic differences between labels such as "information" and "contrast" emerge later and for reasons independent of focus itself.

3.2 A unified semantic approach

The phenomenon of focus in English is usually associated with prosodic prominence alone, and it has thus not been a priority for anglophone linguists to determine meaning-realization mappings in the way authors in other languages,

like Spanish, have done. This differentiation, however, seems unnecessary in light of the data and statistics shown in Chapter 2. In this section, I will briefly outline the QUD framework and demonstrate that answers to Wh-questions, as well as corrections and comparisons, can be treated with the same semantic toolkit in this framework. After this, I will draw on evidence from research on processing that certain independent factors can influence the surface realization of a focused element, yet these factors may themselves be unrelated to focus.

3.2.1 Focus under QUD

Question Under Discussion is a framework introduced by Roberts (1996), and it is based on the insights of Alternative Semantics (Rooth 1992). The main assumption of this framework is that speakers collaborate in the language game by addressing a single common question, providing answers that are relevant to answering this question either fully or partially. Thus, (8-b) answers (8-a), while (8-c) does not.

- (8) a. Who speaks Mandarin?
- b. Anna speaks Mandarin.
- c. Anna speaks Cantonese.

QUD assumes that in any given discourse situation there is a hierarchy of sub-questions that seek to answer the main question under discussion. Given an understanding of questions like that of Hamblin (1973), where questions are denoted as the set of all possible answers with different alternative values standing in the place of Wh-words, the question hierarchy in QUD is such that with each

sub-question the alternative set becomes smaller. The hierarchy below demonstrates this. Assume there are three individuals that are relevant to the discussion: Anna, Mary and Lucy. The relevant alternative sets for each question are included.

- (9) a. Who invited whom?
 {Anna invited Mary; Anna invited Lucy; Mary invited Anna; Mary
 invited Lucy; Lucy invited Mary; Lucy invited Anna}
- b. Who did Anna invite?
 {Anna invited Mary; Anna invited Lucy}
- c. Did Anna invite Mary?
 {Anna invited Mary}

If an interlocutor is being cooperative, if he accepts the question under discussion and deems it answerable, he will aim at answering any of the questions in the hierarchy, as an answer to any of the questions will provide at least a partial answer to the main question. For example, if (9-c) is answered positively, and the proposition *Anna invited Mary* is added to the common ground, this will select at least one of the alternatives in the sets of both (9-b) and (9-a), meaning the answer was relevant to these two broader questions.

Focus in Alternative Semantics is treated in a similar way. The focused element is represented in the focus semantic value as a set of alternatives, which differ from each other only in the value of the focused element. For example, the focus semantic value of (10-a) is (10-b).

- (10) a. [Anna_F] invited Mary.
 b. {Anna invited Mary, Lucy invited Mary}

A crucial concept in the QUD framework is “congruence”, especially in understanding focus. Congruence between a question and its subsequent assertion guarantees that the latter is in fact addressing the former and attempting to answer it. Roberts formally defines congruence in the following way:

- (11) Move (assertion) β is congruent to a question $?\alpha$ iff its focal alternatives $||\beta||$ are the Q-alternatives determined by $?\alpha$, i.e. iff $||\beta|| = \text{Q-alt}(\alpha)$.

What this definition says is that the alternative set evoked by a question, in the manner proposed by Hamblin, and the alternative set yielded by the focus semantic value of the answer, should be the same set. In this way we can see that question (12-a) and assertion (12-b) are congruent: they are represented by the same alternative set.

- (12) a. Who did Anna invite?
 {Anna invited Mary, Anna invited Lucy}
 b. Anna invited [Mary_F]
 {Anna invited Mary, Anna invited Lucy}

With these basic definitions, it is now possible to delve into the main question of this study: can information and contrastive/correction focus be treated with

the same analysis? More concretely, can the focused answer to a Wh-question be represented in the same way as a focused sentence intended to correct or contrast a given element? The answer to these questions seems to be positive under the QUD framework.

We can begin with a representation of a Wh-question, similar to those utilized in the experiment. A Wh-question with a single Wh-word would yield the following representation and hierarchy:

- (13) a. Who hunts zebras?
 {Lions hunt zebras; Cats hunt zebras; Sharks hunt zebras...}
- b. Do Lions hunt zebras?
 {Lions hunt zebras}

Thus, a Wh-question with one Wh-word yields a hierarchy of two questions, with two different alternative sets. This means that the answer to this question, in order to be cooperative, has to be congruent with either one of the options in this hierarchy. There are two possible answers that can be given: one with focus marking and one without. While (14-a), with a focus-marked subject *lion*, is congruent with (13-a), sentence (14-b), an unmarked assertion, is congruent with (13-b).

- (14) a. [Lions_F] hunt zebras.
 b. Lions hunt zebras.

This breakdown of possible answers can give us some insight into why the experimental results, although yielding a variety of focus constructions, also showed a large amount of neutral sentences (both prosodically and syntactically). It is possible to answer a Wh-question without the use of focus marking and still address the question under discussion.¹

We can now turn to the case of corrections, the other scenario that was used as an elicitation trigger in the experiment. Recall that speakers were presented with an incorrect graphic representation of the state of affairs, according to both the context (the text) and their own answer. Their task was to repair this statement in such a way that their interlocutor, the imaginary third person, was prompted to update her common ground to match that of the speaker. In Roberts' formulation of focus in QUD, correction is not considered to be of the same nature as information or contrastive focus. Instead, it is thought to be a "metalinguistic" function, which instead of addressing a question under discussion addresses the veracity of what the interlocutor has just said. In this way, correction does not conform to the usual discourse norm of question-answer interactions.

Instead of taking correction to be a metalinguistic function, I will consider such assertions to be "second chances" for an incorrect proposition to be evaluated. Given a proposition that, due to the fact that it contradicts other propositions already in the common ground, is rejected, a correction statement with

¹It is of course possible that the great amount of neutral sentences was a result of experimental conditions, as is always the case. One possibility is that the setup of the elicitation experiment as a "memory test" might have taxed subjects more than expected, resulting in speakers interrupting the flow of the imaginary conversation to attempt to remember the information they needed from the text. Another possibility is that, whereas a good amount of the subjects followed the instruction to act as if having a conversation with somebody else, some did not abide to this instruction to the necessary extent, and thus produced sentences reflecting a non-conversational context.

focus marking on the relevant (incorrect) element evokes the alternative set needed to re-value the variable. The focus marking on B would thus be motivated by an implicit question that emerges from a clash in the common ground.

(15) A: Cats hunt zebras

B: No, [Lions_F] hunt zebras

Alternative set: {Lions hunt zebras; Cats hunt zebras; Sharks hunt zebras}

Compare this alternative set to that of the congruent Wh-question:

(16) Who hunts zebras?

{Lions hunt zebras; Cats hunt zebras; Sharks hunt zebras}

This is the same implicit question that emerges when there is contradictory information at the same time in the common ground.

What a correction statement like that above achieves is to evoke the original question *Who hunts zebras?* by giving a congruent answer out of the blue. A corrector's job is not just to give the correct proposition (as no focus marking would be needed for this), but in addition to this he is presupposing a question that needs to be answered again (this time with the correct value) in the interlocutor's mind.

The dynamic of correction is thus, unlike with Wh-questions, not starting from a question hierarchy. In this case, the focused answer comes first and the question comes later, yet congruence still holds and discourse is successful.

Non-correction contrast of the kind illustrated in (17) can of course be accounted for in the same way, using congruent questions and answers.

(17) Mary makes [lunch_F], and Lucy makes [dinner_F].

There could be a hierarchy of overt questions, as in (18), or the focused assertion itself could evoke a relevant question in the hierarchy, specifically that in (18-b).

- (18) a. Who makes what?
b. What does Mary make and what does Lucy make?
c. Does Mary make lunch and Lucy make dinner?

Notice that saying a sentence like (17) out of the blue (in order to evoke the congruent question) does not have to have a corrective function. That is, the person who utters it does not have to come to the conclusion that his interlocutor holds an incorrect proposition to be true, for example, that Mary makes dinner and Lucy makes lunch. The purpose of focus marking in this case is to bring up the question implicitly.

A neutral statement delivered as correction should also be possible, given that the question hierarchy has items like (18-c). A statement congruent with this question would have no focus marking at all, yet it being delivered would evoke a yes/no question from the hierarchy, and discourse would still be successful. Presumably a correction delivered without any focus marking, like many of the tokens observed in the experiment, would result in situations of less ambiguity, where the task of correcting is the only task at hand. This claim

would of course have to be tested empirically.

The analysis presented here shows that focus marking as a result of answering a Wh-question can be represented using the same tools as contrastive or correction focus. These tools consist, in the QUD framework, of questions and assertions standing in a congruent relationship, that is, evoking the same alternative sets in their semantic representations.

Having determined that a unified semantic account of different kinds of focus is possible, it is still necessary to account for some facts about the Spanish data. First, if variation in focus construction (syntactic, prosodic, or other) is not due to differences between information and contrast, where do they come from? Also, how can we account for the slight tendency for OVS to be more common as the answer to a Wh-question? The next section will attempt to tie up the Spanish data with some findings about on-line sentence processing. We will see that certain surface forms serve an important function in facilitating information delivery.

3.3 The function of surface realizations

The last section showed that, under a widely accepted formalism, information and contrastive focus can be treated in a uniform account. This leaves the problem of accounting for varying surface realizations. This section is aimed at providing possible explanations for the range of variation in surface forms, both prosodic and syntactic. The conclusion will be that there are independent mechanisms interacting with focus in certain constructions, yet these mechanisms can be independent from focus itself.

3.3.1 Prosodic Marking

The use of pitch accent to signal focus is the most widely used focusing strategy in English, and some (Gundel 1988) hold that its presence in marking focus is universal cross-linguistically. The use of prosody to mark focus in Spanish is largely identical to that of English, in the sense that the pitch accent associated with a focused element is L+ H*, a high pitch on the tonic syllable of the relevant word, and this rise in pitch can occur anywhere in a sentence without affecting the syntactic structure, i.e., it causes no changes to the canonical word order. In this way, a focus construction using the prosodic strategy will be understood here to be as in (19).

- (19) a. With focused subject

[EL LEÓN_F] caza a las zebras
The lion hunts acc the zebras
['Lions_F] hunt zebras'

- b. With focused object

El león caza a [LAS ZEBRAS_F]
The lion hunts acc the zebras
'Lions hunt [zebras_F]

In the experiment performed here, it was found that this kind of focus marking was used under both the Wh-question and the correction condition, and it was used less than the canonical word order (SVO) with neutral intonation. The literature on Spanish focus, however, predicts that this kind of focus marking should be used only in a case like that simulated under the second experimental condition, when signifying contrast or correction. Although I believe that such

a belief is unfounded and that rigorous investigation has not been undertaken to make such a claim, it is true that the pitch accent L+H* (early alignment) has been found in phonetic studies to be associated with focus marking (Face 2002),² and it would be worth exploring why, then, the experiment presented here found no strong correlation between early alignment and either kind of focus.

What is the effect of a specific pitch accent, L+H*, on our on-line processing of language? Arnold (2008) presents the results of two studies, one performed with adults and one with children, that tracked the eye movements of subjects when they heard an accented or an unaccented word in a two-sentence set of instructions. The experiment presented subjects with a Latin square set-up in which objects in the middle had to be moved towards other objects in the corners. Subjects listened to instructions like the following:

(20) Put the candle below the triangle.

A speaker would hear the first sentence and make the relevant move. After this, she could get any one of four possible follow-ups: an instruction that directed her to use the same referent ('candle'), accented or unaccented, or an instruction with a different referent with a nearly identical first syllable, like 'candy' (a "cohort competitor"), accented or unaccented. Thus, the possible follow-ups to the sentence above would be (capital letters indicate prosodic prominence) :

²Face makes the claim that the focus associated with early alignment is contrastive, yet he does not take care of defining its pragmatic function as he is concerned solely with the phonetic side. My suspicion is he may have taken the term "contrastive" from the literature without investigation further on its meaning.

- (21) a. Now, put the candle above the square.
b. Now, put the CANDLE above the square.
c. Now, put the candy above the square.
d. Now, put the CANDY above the square.

Arnold found that subjects had a strong bias for looking at the previously-mentioned referent, like 'candle', when the word in the second sentence was unaccented, even when it was still not clear which one of the two cohort competitors would be pronounced. This means that subjects had a much higher preference for interpreting unaccented elements as "given", or to associate them with the more accessible items in their mind at the moment.

Although the literature suggested another bias going in the opposite direction, that is, one in which the perception of accent would bias subjects to look at the un-mentioned object more quickly, she found that no such preference obtained. Instead, there is a roughly equal amount of looks to both the "given" and the "new" object until much later in the sentence, thus the presence of accent did not suggest that the element in the second sentence would be previously un-mentioned. In fact, subjects, both adults and children, were more likely to move the wrong object when a "new" object was unaccented, but not when a "given" object was accented. This, again, reflects a unilateral bias for lack of accent in givenness but not for presence of accent in newness.

Wagner (2012) demonstrates the existence of similar givenness effects referring to purely phonological givenness. He reports on the "Williams effect", a phenomenon in which speakers will avoid ending two consecutive sentences with the same phonetic material, as in the infelicitous example below.

(22) John saw MARY_F, then JOHN_F was seen by MARY_F.

Wagner argues that, based on the semantic definition of givenness and newness alone ("a previously mentioned or unmentioned referent"), the example above would be predicted to be felicitous, as the thematic role reversal in the second sentence would license contrastive focus. However, when speakers were asked to read such sentences they reliably switched prosodic prominence away from the second occurrence of *Mary*. This observation demonstrates that givenness can also be purely phonological, and that the bias is clearly for marking given elements (with a lack of accent) than newly mentioned ones.

What we can learn from evidence like that obtained from these experiments is that the lack of pitch accent is in itself a sign of givenness. It is possible that, given the prevalence of pitch accent on focused elements, the function of one will one day be shown to be equal to the function of the other. For now, however, we can only conclude that the choice to add a pitch accent like L+H* to a focused element in Spanish is the choice to signal that this element is not as likely to be already given, neither semantically nor phonologically, as if it was unaccented.

What does this mean in terms of the choice between SVO and SVO with a focused subject? Uttering SVO signifies that the identity of the subject is expected and accessible to both speaker and hearer. Uttering SVO means that the subject's identity is considered less expected to the hearer. Unexpectedness goes hand in hand with the correction scenario presented in our experiment, in the sense that delivering a correction is providing somebody with information that they previously did not have, or else it would have been unlikely that their previous assumption was wrong. Thus, it is clear that there may be an

indirect connection between correction/contrast and accentedness. If this is so, why does the experiment find no correlation between accentedness and correction? Although this question cannot be reliably answered with the data at hand, my supposition is that speakers did not consider the information delivered in correction scenarios to be inaccessible, and thus made no effort to place extra emphasis on it. The point to take away from the experimental evidence, then, is that there may very well be a correlation between contrastive/correction focus and accentedness, but this connection can be accounted for without rules dictating an absolute connection between the two.

3.3.2 Subject Dislocation

The other focusing strategy that the Spanish literature has been interested in is that of changing the canonical word order, SVO, to make the subject appear sentence finally. This strategy is, of course, only utilized to focus subjects, yielding the order OVS, or at least it is impossible to tell whether it is used with objects as the results would be indistinguishable from the canonical order. Just to reiterate, this word order is that which is expected, according to the literature, in response to a Wh-question. The sentence in (23) repeats the relevant kind of construction.

- (23) a. With focused subject

A las zebras las caza [el león_F]
 Acc the zebras them hunts the lion
 '[Lions_F] hunt zebras'

- b. With focused object (indistinguishable from canonical SVO)

El león caza a [las zebras_F]
 The lion hunts acc the zebras

'Lions hunt [zebras_F]'

The experimental results from Chapter 2 revealed that focused subjects under both the Wh-question and the correction conditions have occurrences of the OVS word order, challenging predictions from the literature. It is still the case that OVS was more likely to obtain from the Wh-question trigger, with roughly 37% of tokens as opposed to 20% from the correction trigger, which could give us an indication of why native speaker authors have had the intuition that the syntactic strategy is the only possible answer to a Wh-question. These observations show a statistical tendency that, despite being far from an absolute correspondence, deserves some further investigation. For this we will again turn to some reports from the literature on sentence processing.

Kaiser and Trueswell (2004) show results from two experiments performed with Finnish speakers with the goal of better understanding their on-line processing of non-canonical word orders. Like Spanish, Finnish has a canonical SVO word order and a less frequent, non-canonical OVS. The usage of these two orders closely resembles that in Spanish. Having determined with a self-paced reading experiment that, even in a pragmatically cooperative context, non-canonical OVS took slightly longer to read than canonical SVO, Kaiser and Trueswell set out to investigate what was different in the processing of the two word orders. For this, Finnish native speakers were shown pictures of different characters while they listened to stories about them. The last sentence of the story had as its first argument a discourse old character, who could be case-marked as either the subject or the object of the sentence. For example, if the story had mentioned a doctor and a nurse, the sentence could be *doctor-subj glanced-at...*, or *doctor-obj glanced-at...*, where the doctor could be either the sub-

ject or the object of the verb. With the use of an eye-tracker, it was found that when the discourse-old referent was marked as object there were more anticipatory looks to discourse-new referents to occupy the place of the the subject (the sentence-final slot). That is, Finnish speakers showed a bias for new elements to occupy the sentence-final subject position, even before they could know the identity of the actual subject. Kaiser and Trueswell take this evidence, combined with the slight delay in reading-time from the first experiment, to conclude that an OVS order presents speakers with the added load of anticipating what discourse-new entity will be mentioned at the end.

Closer to home, Arnold and Lao (2008) studied the effects of different word orders in English. As the word order in this language is not as flexible, one of the only constructions that would lend itself to this study was heavy NP shift. Native English speakers were presented pictures with a few triangles of different colors that contained different shapes inside, and they were instructed to move them on top of other shapes. Their prediction was that the ending of a sentence like (24-b) would be preferred by hearers to be discourse-new than the ending of (24-a), even before they could hear the end of the sentence to disambiguate the identity of the relevant triangle.

- (24) Context sentence: 'Put [the red triangle with a squiggle] [on the heart]'
- a. Now [put the red triangle with...]
 - b. Now [put on the moon] [the red triangle...]

It was in fact found that NP-shifted objects were more likely to be anticipated to be discourse-new. We can see then that even in languages with less flexible

word orders there seems to be an effect of word order on discourse reference.

What we find now from the experiments described in this section is a discourse-new bias. From this observation it is possible to hypothesize about the role of OVS in Spanish. If when faced with a focused subject a Spanish speaker chooses the order OVS he is likely assuming that the S is new information to the hearer, or that the subject contributes new material needed to continue the conversation. If on the other hand he chooses SVO he is not making assumptions about the newness status of the subject, even if the latter is focused (congruent to the QUD). Why should the answer to a Wh-question skew speakers towards the use of OVS over SVO? When a speaker replies to a Wh-question, practically speaking, he is very likely to be delivering new information, as the most common function of Wh-questions is to inquire about an unknown. In this situation, it makes sense that the answer to a Wh-question would tend to emphasize newness in the answer. Why were there so many experimental tokens that did not use OVS in this very circumstance? Because the statement congruent with a Wh-question does not have to be delivering new information, something that is again especially likely in our experiment, where speakers had just read a text that contained all the answers they needed.

It is worth pointing out that in the same way we can account for why passivization came up as a focusing strategy. All the passivized tokens obtained in the experiment had the order OVS, and all but one of the responses was focusing the subject.

3.3.3 Other Strategies

Despite most of the attention in the Spanish literature being paid to the "prosodic" and the "syntactic" strategies of focus marking, it was found in Chapter 2 that there are other constructions that can be used to focus certain constituents in this language. To refresh our memory, they are listed below:

- (25) a. Subject pseudo-cleft (mostly to focus S)
- b. Object pseudo-cleft (mostly to focus O)
- c. Inverted subject pseudo-cleft (no correlation)
- d. Subj headless cleft ; Obj headless cleft (mostly to focus S and O respectively)
- e. Subject Cleft (mostly to focus S; seen only in correction scenario)

Most of these strategies are also used in English, notably the cleft and pseudo-cleft constructions. We can see that all of these constructions tend to involve the isolation of the focused constituent in a clause that is then linked to the remainder of the sentence constituents with a copula. Thus, if the subject is focused, for example, we can obtain any of these alternatives (the Spanish translation would be roughly equivalent syntactically):

- (26) a. The animal that hunts zebras [is [the lion]]
- b. [[The lion] is] the animal that hunts zebras
- c. [It is [the lion]] that hunts zebras

The construction in (25-d), which lacks an equivalent in English, can be argued to be a cleft-like construction where the focused element comes directly after the verb 'to be', and it is possibly subordinate to it.

- (27) A las zebras las caza [es [el león]]
 Acc the zebras them hunts is the lion
 'Zebras are hunted by lions'

I will not go deeply into the properties of this latter construction, but I will say that, as evidenced in the experiment, it is used in a way that resembles the use of clefts for focus purposes.

All of these possibilities seem to have in common an existential presupposition of the focused element. As noted by Rooth (1996), it would be quite infelicitous to utter *It is nobody who hunts zebras*. In the same way, all the other constructions seem to be presupposing the existence of an entity to occupy the subject position, in this case the lion, as evidenced below.

- (28) a. #Nobody is the animal that hunts zebras
 b. #The animal that hunts zebras is nobody
 c. #As for zebras, who hunts them is nobody

The construction in (25-d) also seems to have an existential presupposition.

- (29) #A las zebras las caza es nadie
 acc the zebras them hunts is nobody
 'It's nobody who hunts zebras'

We may thus satisfactorily conclude that all of these alternatives can be grouped together as similar constructions, both syntactically and semantically. Although clefts and pseudoclefts have been observed by many to produce a focusing effect (see, for example, Foraker and McElree 2007), we can see that these constructions have the additional function of projecting an existential presupposition of the clefted element. Although focus seems to always be present in cleft constructions, clefts are obviously not the only realization of focus, thus clefts seem to be rather a focus-associated phenomenon with an additional meaning of its own.

3.3.4 Connecting pragmatic function with surface realization

We have until now investigated the function that each kind of focus-related realization is likely to be exercising when uttered, but we have not yet attempted to determine how these factors would interact and how they could be formalized. A possible issue influencing the choice of one word order or pitch accent over another is the interaction of the different pragmatic factors discussed so far. A speaker may try to deliver a statement in which the subject is at the same time unexpected to the hearer and discourse-new, and he may either choose to favor one factor over the other, or to give a surface realization not discussed so far, OVS, where both functions are combined (I have no evidence to conclude that such a surface realization is not possible). Similarly, a speaker can be delivering a focused statement (according to QUD) and have no pragmatic priority other than delivering the semantic content of the statement, in which case an unmarked construction would obtain (this situation is presumably more unlikely in natural speech). This system of priorities would seem suitable, again, for Op-

tinality Theory, in which case it would be necessary to create constraints linking, for example, unaccentedness with expectedness, or sentence-finality with newness, such as those (loosely) formulated below.

(30) *AccentedExpec

Expected or accessible material is unaccented.

(31) FinalNewInfo

Discourse-new information is sentence-final.

Creating constraints of this kind, that is, constraints linking pragmatic function and surface realization, would be one possible approach in the endeavor to formalize the tendencies summarized in this section. The fact that these constraints are not absolute but statistical could be captured by Boersma's stochastic addition, thus allowing for an account of the observation that one word order does not map directly to a given function (or to a given "kind of focus"). However, I do not believe that the evidence presented here, neither from the reported experiments nor from my own, can allow us to formulate such a framework. The reason for this is that the reported connections between function and surface are not well understood at this point, and even if they were I do not believe it is the case that these connections are "violated" randomly (if they were constraints). As mentioned earlier, the pragmatic priorities of a speaker can interact, creating different possible surface realizations, but I do not believe that speakers choose to favor the expression of newness, for example, over the expression of unexpectedness, in a stochastic fashion. The context, not a random mechanism, would more likely dictate this choice, and if we wanted to model the context in

Optimality Theory we would have to capture many more subtleties than those related to language. For this reason, I will conclude the formal analysis of the relevant data at this point, having formally demonstrated only that focus can be thought of and represented as independent from the many functions that have been attributed to it.

3.3.5 Summary

This section has presented the different kinds of focus constructions found in the experiment from Chapter 2, and it has provided some additional empirical observations that pertain to the interpretation of these constructions. It was found that the different surface realizations of focus constructions in Spanish seem to have functions related to, yet independent from, focus. For the prosodic construction, it seems that lack of accent signals givenness, therefore focus with prosodic marking is in a way conveying a meaning of unexpectedness. Change in canonical order, as in the OVS construction, appears to have the added meaning of discourse-newness for the sentence-final constituent. Finally, clefts add an existential presupposition to the focused element. It is clear that all of these functions are diverse, and focus at its core cannot be characterized uniquely as conveying any of these meanings only. Thus the points to take away from this review of focusing strategies are that surface form has in itself a role, that this role adds pragmatic meaning and facilitates processing, and that focus - the function of pointing at, highlighting a given alternative from among many - is independent from these added meanings.

3.4 Future Empirical Work

In the present work I have shown new empirical observations about the inventory of focus-related constructions in Spanish, and have used these new data, in conjunction with an existing semantic framework, to defend a unified theory of focus in Spanish, in opposition to that assumed in previous literature. However, I believe it necessary to point out that the experiment reported on here is but a pilot study aimed at eliciting a sample of the available constructions. For this reason, many interesting questions were not specifically addressed or cannot be tested with the data obtained, and in any case a more robust sample would be very desirable before coming to stronger conclusions about the phenomenon at hand.

It will be left to future work to obtain more data on focused objects. Much of the data containing sentences with focused objects was indistinguishable from neutral sentences, and in the absence of a control neutral sentence sample there was little opportunity to come to any useful conclusions regarding focused object data. Similarly, a subsequent study would improve by varying the order in which the Wh-question and the correction triggers are delivered, to eliminate any effects that this sequence could be causing.

Another task that could be completed in future research is testing the predictions made in the QUD analysis. Does correction really trigger an implicit question in the hearer's mind, or it is, as Roberts proposes, a metalinguistic function? An empirical test for this would have to observe speaker interactions and attempt to deduce their thought processes in the presence of correction. Further investigations of this kind would not only help us understand discourse better,

but also they would help to construct better formal models for it.

3.5 General Conclusion

This thesis has contributed to the understanding of different realizations of focus in Spanish. The general assumption from the literature has been that there is a fundamental difference (in pragmatic meaning as well as surface realization) between information focus (response to a Wh-question) and contrastive focus (statement given in a contrast or correction scenario). This difference has been characterized variously as being in the syntax, at the prosodic level, or at an interface level (phonology-syntax or syntax-semantics). In this work I have taken an approach to this perceived fundamental difference from an experimental angle, in order to test whether the divide is as absolute as it has been assumed to be. The results of an elicitation experiment were not consistent with the assumption that the divide between information or contrastive focus marking is absolute, that is, the kind of focus that a sentence was marked with was not a good predictor of its surface structure. These results were successfully modeled, for both kinds of focus, using the same QUD framework, which indicates that at a formal level there does not have to be a fundamental divide between the two kinds. Additionally, a look at some literature on on-line sentence processing showed that there may be an indirect functional explanation behind the apparent correlations of certain pragmatic meanings with certain surface structures (e.g., OVS with answers to Wh-questions), which gives us a clue as to why authors on Spanish focus may have assumed the existence of these meaning-to-surface connections in the first place. The conclusion of this work is, then, that the absolute mapping assumed by previous authors is a very simplified, albeit

not completely erroneous, view at the phenomenon of focus in Spanish.

APPENDIX A

EXPERIMENTAL MATERIALS

A.1 Preliminaries

Instrucciones

- Lea los textos y preste atención a las ilustraciones que los acompañan
- Responda a la pregunta después de cada texto **con una oración completa**
- Después verá, en ilustraciones, lo que Rocío cree que usted dijo. Dígale si la respuesta es correcta o no, y si no, dígale lo que decía el texto en realidad, **con oraciones completas**

Figure A.1: Instructions presented to subjects: *Read the texts and pay attention to the accompanying illustrations./ Answer the question presented after each text using a full sentence./ Later you will see, with illustrations, that which Rocío thought you said. Tell her if the answer is correct or not, and if not, tell her what the text actually said, using full sentences.*



Una comida balanceada contiene una buena cantidad



de proteínas y carbohidratos. Por el contrario, una



comida no balanceada contiene mucha sal y grasa.

¿Qué contiene una comida balanceada?



Figure A.2: Pre-training trial 1. Slide 1: *A healthy meal contains a good amount of protein and carbohydrates. On the other hand, an unhealthy meal contains much salt and fat.*

Slide 2: *What does a healthy meal contain*



Antes del euro, los diferentes países de Europa

tenían sus propias monedas. Por ejemplo,



Alemania tenía el marco y Francia tenía el franco.

¿Qué moneda tenía Francia?

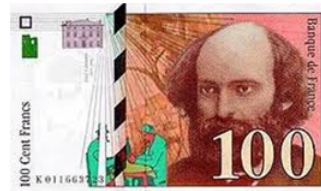


Figure A.3: Pre-training trial 2. Slide 1: Before the euro, different European countries had their own currency. For example, Germany had the mark and France had the franc.
Slide 2: What currency did France have?

A.2 Experimental Slides

¿Qué nos enseñan en el colegio sobre los animales de



granja? Claro, que la vaca nos da la leche para hacer



queso y mantequilla, y que la gallina nos da los



huevos.

¿Qué cosa nos da la gallina?



Figure A.4: Slide 1: *What do they teach us in school about farm animals? Of course, that cows give us milk to make cheese and butter, and that hens give us eggs.*

Slide 2: *What do cows give us?*

Por varias décadas, los latinoamericanos hemos
disfrutado de las caricaturas de Pepo, que inventó
a Condorito, y de Quino, que inventó a Mafalda,
pero también disfrutamos de humor más serio,
como el de Vladdo, que inventó a Aleida.

¿Quién inventó a Mafalda?

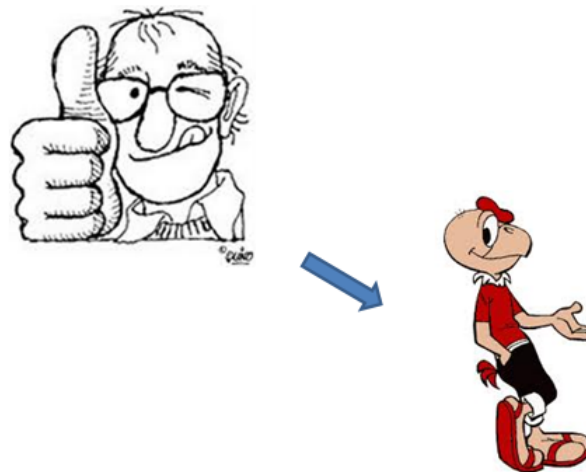


Figure A.5: Slide 1: For some decades, Latin Americans have enjoyed comic strips by Pepo, who created "Condorito", and by Quino, who created "Mafalda", but we also enjoy more serious humor, like that of Vladdo, who created "Aleida"
Slide 2: Who created "Mafalda"?

La última cuenta de celular de nuestro plan familiar



mostró que a la abuela le gusta mucho llamar al cura,



que mi mamá llama a mi papá tres veces al día, y que



mi hermana siempre está hablando con el novio.

¿A quién llama la abuela?



Figure A.6: Slide 1: *The last cellphone bill for our family plan revealed that my grandmother really likes to call the priest, my mother calls my father three times a day, and my sister is always talking to her boyfriend.*
Slide 2: *Who does the grandmother call?*



En la antigüedad, había artesanos que hacían objetos



de uso diario. El carpintero hacía muebles, mientras



el herrero hacía herramientas y el molinero hacía



harina. Aunque la ropa se hacía en casa, también



había sastres para hacer ropa.

¿Qué hace el molinero?



Figure A.7: Slide 1: In antiquity, there were different craftsmen who made objects for daily use. The carpenter made furniture, while the blacksmith made tools and the miller made flour. Although clothes were made at home, there were also tailors who made clothes

Slide 2: What does the miller make?

Las diferentes religiones del mundo construyen templos



especiales para sus dioses. Los cristianos construyen



iglesias, y los judíos sinagogas, al tiempo que los



musulmanes hacen mezquitas. En ciudades con mucha

diversidad se pueden ver los tres templos juntos.

¿Quién construye las sinagogas?



Figure A.8: Slide 1: *The different religions of the world build special temples for their gods. Christians build churches, and Jews build synagogues, at the same time that Muslims build mosques. In cities that have great diversity one can see all the temples together*

Slide 2: *Who builds synagogues?*

El reino animal está lleno de predadores. En el agua,



el tiburón caza a los peces, así como en la tierra el



león caza a las zebras. Hasta los gatos, nuestras



queridas mascotas, cazan aves.

¿Quién caza a las zebras?



Figure A.9: Slide 1: *The animal kingdom is full of predators. In the water, sharks hunt fish, in the same way that in land lions hunt zebras. Even cats, our dear pets, hunt birds.*

Slide 2: *Who hunts zebras?*

El alcohol ha existido desde siempre en las culturas



del mundo. Por ejemplo, los rusos se han



especializado en hacer vodka. Más cerca a



nosotros, en Cuba, los cubanos hacen ron, y en el



oriente, en Japón, se hace el sake.

¿Qué bebida hacen los cubanos?

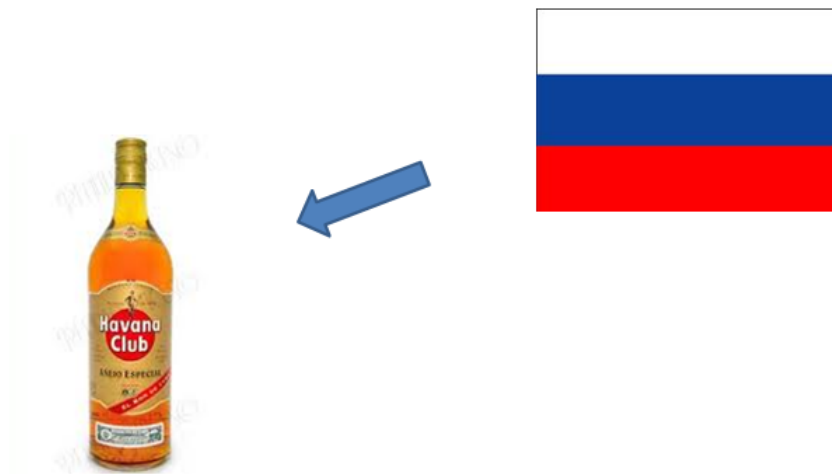


Figure A.10: Slide 1:Alcohol has always existed among the different cultures of the world. For example, Russians have specialized in making vodka. Closer to us, in Cuba, Cubans make rum, ad in the East, in Japan, sake is made.

Slide 2: What drink do Cuban make?

¿Cómo son los hábitos de lectura de una familia típica?



Imagine una sesión de lectura en la sala. Es muy posible



que el padre esté leyendo el periódico, que la madre



lea una novela, y que el hijo, interesado en actualidad,



lea una revista. Lo triste es que es muy posible que



todos prefieran ver televisión.

¿Quién lee la revista?



Figure A.11: Slide 1: How are the reading habits of a typical family? Imagine a reading session in the living room. It is very possible that the father is reading the newspaper, the mother is reading a novel, and the child, interested in current events, is reading a magazine. The sad thing is that it is very possible that they all prefer to watch TV.

Slide 2: Who reads the magazine?

Hay gente en mi familia que siempre se pone la misma



ropa. Mi abuelo siempre anda con el mismo chaleco, y



mi hermano está todo el tiempo con su cachucha. Mi



hermana es la más rara, siempre con sus tacones.

¿Qué se pone el abuelo?



Figure A.12: Slide 1: *There are people in my family that always wear the same clothes. Mi grandfather is always wearing his vest, and my brother is always with his cap. My sister is the strangest one, always with her high heels.*
Slide 2: *What does the grandfather wear?*

El paladar de una nación está determinado por los productos disponibles. Por eso, no es sorpresa que



Argentina se especialice en la res y que Japón se



especialice en pescado. También hay países más



exóticos, como Islandia, donde la especialidad es el



cordero.

¿Dónde es popular el cordero?



Figure A.13: Filler. Slide 1: *A nation's palate is determined by the available products. For this reason it is no surprise that Argentina specializes in meat and that Japan specializes in fish. There are also more exotic countries, like Iceland, where mouton is the specialty.*

Slide 2: *Where is mouton popular?*



El trigo es el cereal más popular del mundo, pero distintas



regiones tienen sus preferencias. En América se usa



mucho el maíz, así como en Europa es popular el



centeno. En Asia, el arroz está siempre presente en las

comidas.

¿Cuál es el cereal más popular del mundo?



Figure A.14: Filler. Slide 1: *Wheat is the most popular cereal in the world, but different regions have their own preferences. In America corn is very often used, in the same way as in Europe rye is popular. In Asia, rice is always present in food*
Slide 2: *Which is the most popular cereal in the world?*

Si hablamos de especialidades gastronómicas, Suiza



es el campeón del mundo en chocolate. De la



misma forma, Italia produce el mejor aceite, y



Francia hace el mejor queso.

¿ Es el mejor aceite de Suiza?



Figure A.15: Filler. Slide 1: *If we talk about culinary specialties, Switzerland is the world champion in chocolate. In the same way, Italy produces the best oil and France produces the best cheese.*

Slide 2: *Is the best oil from Switzerland?*

APPENDIX B

RESULT TABLES FOR WH TRIGGER DATA

Subject ID	Question ID	Kind of Trigger	Focus Location	Construction	Early Alignment?
ALT	MagazineWH	Wh	S	ovs	
ALT	MosqueWH	Wh	S	ovs	
ALT	CowWH	Wh	O	svo	
ALT	CubaWH	Wh	O	svo	
ALT	MillerWH	Wh	O	svo	
ALT	PriestWH	Wh	O	svo	
ALT	VestWH	Wh	O	svo	
ALT	MafaldaWH	Wh	S	svo	H*
ALT	LionWH	Wh	S	svo	
ALT	SpainWH	Wh	S	svo	
CAB	CowWH	Wh	O	svo	
CAB	CubaWH	Wh	O	svo	
CAB	MillerWH	Wh	O	svo	
CAB	PriestWH	Wh	O	svo	
CAB	VestWH	Wh	O	svo	
CAB	MafaldaWH	Wh	S	svo	H*
CAB	LionWH	Wh	S	svo	
CAB	MagazineWH	Wh	S	svo	
CAB	MosqueWH	Wh	S	svo	
CAB	SpainWH	Wh	S	svo	
GG	LionWH	Wh	S	ovs	
GG	MafaldaWH	Wh	S	ovs	
GG	MagazineWH	Wh	S	ovs	
GG	MosqueWH	Wh	S	ovs	
GG	CowWH	Wh	O	svo	
GG	CubaWH	Wh	O	svo	
GG	MillerWH	Wh	O	svo	
GG	PriestWH	Wh	O	svo	
GG	VestWH	Wh	O	svo	
GG	SpainWH	Wh	S	svo	
GLA	CubaWH	Wh	excl	excl	
GLA	MagazineWH	Wh	S	ovs	
GLA	MafaldaWH	Wh	S	spc	
GLA	CowWH	Wh	O	svo	
GLA	MillerWH	Wh	O	svo	
GLA	PriestWH	Wh	O	svo	
GLA	VestWH	Wh	O	svo	
GLA	MosqueWH	Wh	S	svo	H*
GLA	SpainWH	Wh	S	svo	H*
GLA	LionWH	Wh	S	svo	
LAC	MosqueWH	Wh	S	ovs	
LAC	VestWH	Wh	O	svo	
LAC	CowWH	Wh	O	svo	
LAC	CubaWH	Wh	O	svo	

Subject ID	Question ID	Kind of Trigger	Focus Location	Construction	Early Alignment?
LAC	MillerWH	Wh	O	svo	
LAC	PriestWH	Wh	O	svo	
LAC	LionWH	Wh	S	svo	
LAC	MafaldaWH	Wh	S	svo	
LAC	MagazineWH	Wh	S	svo	
LAC	SpainWH	Wh	S	svo	
LAO	MagazineWH	Wh	S	ovs	
LAO	SpainWH	Wh	S	ovs	
LAO	MafaldaWH	Wh	S	spc	
LAO	MosqueWH	Wh	S	spc	
LAO	CubaWH	Wh	O	svo	
LAO	CowWH	Wh	O	svo	
LAO	MillerWH	Wh	O	svo	
LAO	PriestWH	Wh	O	svo	
LAO	VestWH	Wh	O	svo	
LAO	LionWH	Wh	S	svo	
LF	MillerWH	Wh	O	invscl	
LF	MafaldaWH	Wh	S	invscl	
LF	CowWH	Wh	O	svo	
LF	CubaWH	Wh	O	svo	
LF	PriestWH	Wh	O	svo	
LF	VestWH	Wh	O	svo	
LF	LionWH	Wh	S	svo	
LF	MagazineWH	Wh	S	svo	
LF	MosqueWH	Wh	S	svo	
LF	SpainWH	Wh	S	svo	
MFL	MafaldaWH	Wh	S	ovs	
MFL	MagazineWH	Wh	S	ovs	
MFL	MosqueWH	Wh	S	ovs	
MFL	CowWH	Wh	O	svo	
MFL	CubaWH	Wh	O	svo	
MFL	MillerWH	Wh	O	svo	
MFL	PriestWH	Wh	O	svo	
MFL	VestWH	Wh	O	svo	
MFL	SpainWH	Wh	S	svo	H*
MFL	LionWH	Wh	S	svo	
MG	MosqueWH	Wh	excl	excl	
MG	LionWH	Wh	S	ovs	
MG	MagazineWH	Wh	S	ovs	
MG	SpainWH	Wh	S	ovs	
MG	CowWH	Wh	O	svo	
MG	CubaWH	Wh	O	svo	
MG	MillerWH	Wh	O	svo	
MG	PriestWH	Wh	O	svo	
MG	VestWH	Wh	O	svo	
MG	MafaldaWH	Wh	S	svo	H*
MLJ	MagazineWH	Wh	excl	excl	
MLJ	LionWH	Wh	S	invscl	
MLJ	MosqueWH	Wh	S	ovs	
MLJ	MafaldaWH	Wh	S	pass	

Subject ID	Question ID	Kind of Trigger	Focus Location	Construction	Early Alignment?
MLJ	CowWH	Wh	O	svo	
MLJ	CubaWH	Wh	O	svo	
MLJ	MillerWH	Wh	O	svo	
MLJ	PriestWH	Wh	O	svo	
MLJ	VestWH	Wh	O	svo	
MLJ	SpainWH	Wh	S	svo	
MS	CowWH	Wh	O	opc	
MS	CubaWH	Wh	O	opc	
MS	MafaldaWH	Wh	S	spc	
MS	MagazineWH	Wh	S	spc	
MS	MosqueWH	Wh	S	spc	
MS	SpainWH	Wh	S	spc	
MS	MillerWH	Wh	O	svo	
MS	PriestWH	Wh	O	svo	
MS	VestWH	Wh	O	svo	
MS	LionWH	Wh	S	svo	
MTL	LionWH	Wh	S	ovs	
MTL	MafaldaWH	Wh	S	ovs	
MTL	MosqueWH	Wh	S	ovs	
MTL	CowWH	Wh	O	svo	
MTL	CubaWH	Wh	O	svo	
MTL	MillerWH	Wh	O	svo	
MTL	PriestWH	Wh	O	svo	
MTL	VestWH	Wh	O	svo	
MTL	MagazineWH	Wh	S	svo	
MTL	SpainWH	Wh	S	svo	
RA	CubaWH	Wh	O	opc	
RA	MagazineWH	Wh	S	ovs	
RA	SpainWH	Wh	S	ovs	
RA	LionWH	Wh	S	pass	
RA	MosqueWH	Wh	S	pass	
RA	MafaldaWH	Wh	S	spc	
RA	CowWH	Wh	O	svo	
RA	MillerWH	Wh	O	svo	
RA	PriestWH	Wh	O	svo	
RA	VestWH	Wh	O	svo	

Construction Abbreviation Key

sveso	Obj headless cleft
ovess	Subj headless cleft
pass	Passive
invscl	Inverted subject pseudo-cleft
spc	Subject pseudo-cleft
opc	Object pseudo-cleft
scleft	Subject cleft
excl	Excluded

APPENDIX C

RESULT TABLES FOR CORRECTION TRIGGER DATA

Subject ID	Question ID	Kind of Focus	Focus Location	Construction	1st/2nd occurrence	Early alignment?
ALT	CubaCorr	C	excl	excl		
ALT	LionCorr	C	excl	excl		
ALT	MafaldaCorr	C	excl	excl		
ALT	PriestCorr	C	O	sveso		
ALT	CowCorr	C	O	svo	1	
ALT	MillerCorr	C	O	svo		
ALT	MosqueCorr	C	O	svo		
ALT	SpainCorr	C	O	svo		
ALT	VestCorr	C	O	svo		
ALT	CowCorr	C	S	invscI	2	
ALT	MagazineCorr	C	S	spc		
CAB	CubaCorr	C	S	svo		H*
CAB	MillerCorr	C	S	svo		H*
CAB	LionCorr	C	O	svo		
CAB	MafaldaCorr	C	O	svo	1	
CAB	MagazineCorr	C	O	svo		
CAB	MosqueCorr	C	O	svo		
CAB	PriestCorr	C	O	svo		
CAB	SpainCorr	C	O	svo		
CAB	VestCorr	C	O	svo	1	
CAB	VestCorr	C	S	scleft	2	
CAB	CowCorr	C	S	svo		
CAB	MafaldaCorr	C	S	svo	2	
GG	MillerCorr	C	excl	excl		
GG	MosqueCorr	C	excl	excl		
GG	SpainCorr	C	O	svo		
GG	PriestCorr	C	O	svo	1	
GG	CowCorr	C	O	svo	1	
GG	VestCorr	C	O	svo	1	
GG	MafaldaCorr	C	S	ovess		
GG	MagazineCorr	C	S	ovess		
GG	PriestCorr	C	S	ovs	2	
GG	LionCorr	C	S	ovs		
GG	VestCorr	C	S	ovs	2	
GG	CowCorr	C	S	spc	2	
GG	CubaCorr	C	S	sveso		
GLA	CubaCorr	C	excl	excl		
GLA	SpainCorr	C	excl	excl		
GLA	VestCorr	C	excl	excl		
GLA	LionCorr	C	O	ovess	2	
GLA	MafaldaCorr	C	O	svo	2	
GLA	MosqueCorr	C	O	svo		

Subject ID	Question ID	Kind of Focus	Focus Location	Construction	1st/2nd occurrence	Early alignment?
GLA	PriestCorr	C	O	svo		
GLA	LionCorr	C	S	invsl	1	
GLA	MagazineCorr	C	S	ovs		
GLA	CowCorr	C	S	scleft		
GLA	MafaldaCorr	C	S	scleft	1	
GLA	MillerCorr	C	S	scleft		
GP	CubaCorr	C	O	sveso		
GP	CowCorr	C	O	svo	2	
GP	MafaldaCorr	C	O	svo	1	
GP	MillerCorr	C	O	svo		
GP	PriestCorr	C	O	svo		
GP	SpainCorr	C	O	svo		
GP	VestCorr	C	O	svo		
GP	MafaldaCorr	C	S	ovs	2	
GP	MagazineCorr	C	S	ovs		
GP	MosqueCorr	C	S	ovs		
GP	LionCorr	C	S	pass		
GP	CowCorr	C	S	svo	1	
LAC	MillerCorr	C	S	svo	1	H*
LAC	MosqueCorr	C	excl	excl		
LAC	CowCorr	C	O	svo	1	
LAC	CubaCorr	C	O	svo	2	
LAC	LionCorr	C	O	svo	1	
LAC	MafaldaCorr	C	O	svo		
LAC	MagazineCorr	C	O	svo	1	
LAC	MillerCorr	C	O	svo	2	
LAC	PriestCorr	C	O	svo	1	
LAC	SpainCorr	C	O	svo	1	
LAC	VestCorr	C	O	svo	1	
LAC	VestCorr	C	S	svo	2	
LAC	CowCorr	C	S	svo	2	
LAC	CubaCorr	C	S	svo	1	
LAC	LionCorr	C	S	svo	2	
LAC	MagazineCorr	C	S	svo	2	
LAC	PriestCorr	C	S	svo	2	
LAC	SpainCorr	C	S	svo	2	
LAO	CubaCorr	C	excl	excl		
LAO	VestCorr	C	O	invsl	2	
LAO	MagazineCorr	C	O	spc	1	
LAO	MafaldaCorr	C	O	sveso	1	
LAO	SpainCorr	C	O	sveso		
LAO	CowCorr	C	O	svo	2	
LAO	LionCorr	C	O	svo	2	
LAO	MillerCorr	C	O	svo	2	
LAO	PriestCorr	C	O	svo	2	
LAO	CowCorr	C	S	spc	1	
LAO	LionCorr	C	S	spc	1	
LAO	MafaldaCorr	C	S	spc	2	
LAO	MagazineCorr	C	S	spc	2	
LAO	MillerCorr	C	S	spc	1	
LAO	MosqueCorr	C	S	spc		
LAO	PriestCorr	C	S	spc	1	
LAO	VestCorr	C	S	spc	1	

Subject ID	Question ID	Kind of Focus	Focus Location	Construction	1st/2nd occurrence	Early alignment?
LF	CowCorr	C	excl	excl		
LF	CubaCorr	C	excl	excl		
LF	LionCorr	C	excl	excl		
LF	MosqueCorr	C	excl	excl		
LF	SpainCorr	C	excl	excl		
LF	MillerCorr	C	O	svo		
LF	PriestCorr	C	O	svo		
LF	VestCorr	C	O	svo		
LF	MafaldaCorr	C	S	spc		
LF	MagazineCorr	C	S	spc		
MFL	MillerCorr	C	S	svo		H*
MFL	MosqueCorr	C	excl	excl		
MFL	SpainCorr	C	O	scleft		
MFL	CowCorr	C	O	svo	1	
MFL	LionCorr	C	O	svo		
MFL	MafaldaCorr	C	O	svo		
MFL	MagazineCorr	C	O	svo	1	
MFL	CowCorr	C	S	ovs	2	
MFL	CubaCorr	C	S	pass		
MFL	PriestCorr	C	S	scleft		
MFL	VestCorr	C	S	spc		
MFL	MagazineCorr	C	S	svo	2	
MG	MosqueCorr	C	excl	excl		
MG	CubaCorr	C	O	sveso		
MG	PriestCorr	C	O	sveso		
MG	CowCorr	C	O	svo		
MG	MafaldaCorr	C	O	svo		
MG	MillerCorr	C	O	svo		
MG	LionCorr	C	S	ovess		
MG	MagazineCorr	C	S	ovess		
MG	SpainCorr	C	S	ovess		
MG	VestCorr	C	S	ovs		
MLJ	MafaldaCorr	C	S	svo	2	H*
MLJ	MillerCorr	C	excl	excl		
MLJ	MosqueCorr	C	excl	excl		
MLJ	PriestCorr	C	excl	excl		
MLJ	SpainCorr	C	excl	excl		
MLJ	CubaCorr	C	O	invsc		
MLJ	CowCorr	C	O	svo		
MLJ	LionCorr	C	O	svo		
MLJ	MafaldaCorr	C	O	svo	1	
MLJ	MagazineCorr	C	O	svo	1	
MLJ	VestCorr	C	O	svo		
MLJ	MagazineCorr	C	S	svo	2	
MS	CubaCorr	C	excl	excl		
MS	MafaldaCorr	C	O	opc		
MS	SpainCorr	C	O	spc		
MS	CowCorr	C	O	svo		
MS	LionCorr	C	O	svo		
MS	MagazineCorr	C	O	svo	2	
MS	MosqueCorr	C	O	svo		
MS	MillerCorr	C	S	invsc		
MS	VestCorr	C	S	spc		
MS	MagazineCorr	C	S	spc	1	
MS	PriestCorr	C	S	spc		

Subject ID	Question ID	Kind of Focus	Focus Location	Construction	1st/2nd occurrence	Early alignment?
MTL	MosqueCorr	C	excl	excl		
MTL	SpainCorr	C	O	invscf		
MTL	CowCorr	C	O	svo		
MTL	CubaCorr	C	O	svo		
MTL	LionCorr	C	O	svo		
MTL	MafaldaCorr	C	O	svo		
MTL	MagazineCorr	C	O	svo	2	
MTL	PriestCorr	C	O	svo	1	
MTL	VestCorr	C	O	svo	1	
MTL	MagazineCorr	C	S	ovs	1	
MTL	PriestCorr	C	S	ovs	2	
MTL	VestCorr	C	S	ovs	2	
MTL	MillerCorr	C	S	svo		
RA	MosqueCorr	C	O	pass		
RA	MafaldaCorr	C	O	sveso	1	
RA	PriestCorr	C	O	sveso		
RA	CowCorr	C	O	svo		
RA	MagazineCorr	C	O	svo	1	
RA	MillerCorr	C	O	svo		
RA	VestCorr	C	O	svo		
RA	LionCorr	C	S	ovess		
RA	SpainCorr	C	S	ovess		
RA	MagazineCorr	C	S	ovs	2	
RA	MafaldaCorr	C	S	ovs	2	
RA	CubaCorr	C	S	sveso		

Construction Abbreviation Key	
sveso	Obj headless cleft
ovess	Subj headless cleft
pass	Passive
invscf	Inverted subject pseudo-cleft
spc	Subject pseudo-cleft
opc	Object pseudo-cleft
scleft	Subject cleft
excl	Excluded

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